JANUARY 1981 NUMBER 437 -- Part II

Solar-Geophysical Data comprehensive reports

Data for July 1980 & Miscellanea

Explanation of Data Reports Issued as Number 426 (Supplement) February 1980

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Part II (Comprehensive Reports)

NO. 437 JANUARY 1981

DATA FOR
JULY 1980

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SOLAR-GEOPHYSICAL DATA

No. 437

Issued in two parts

Helen E. Coffey, Editor

J. Virginia Lincoln, Chief
Solar-Terrestrial Physics Division

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Notes:

"426A 50" listed under 1979 Dec means that the sunspot drawings for Dec 1979 were contained in Solar-Geophysical Data Number 426 - Part I, beginning on page 50.

A = Part I, B = Part II.

----- = no data available.
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JULY 1980 DATA

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NOTE ON DELAY OF GROUPED SOLAR FLARE DATA:

Beginning with the July 1980 issue of *Solar-Geophysical Data*, we planned to publish the final listing of solar flares 13 months, rather than 6 months, from the date of observation. Although this schedule has not been met since the July 1980 issue was published, we and our colleagues at the Meudon Observatory plan to return to the 13-month delay as soon as possible. This new schedule will cause the Daily Flare Index and the Regional Flare Index to appear 13 and 14 months from the date of observation. At the same time we are suspending indefinitely publication of the Abbreviated Calendar Record. We deeply regret this situation, but the volume of data recorded during sunspot maximum and computer conversion problems at the Meudon Observatory and at NGSDC have forced these greater delays on us.

For researchers who need the comprehensive solar flare data more promptly, NGSDC has available "preliminary" listings from September and October 1979. These complete tabulations lack the final Meudon corrections, and will only be published after they have been made. Nevertheless, printouts for the September-October 1979 period are available on request, if they be recognized as "preliminary" when used in research projects. A fee may be charged for reproducing these data. Please contact the editor, Helen E. Coffey, at (303) 497-6223 or telex SOLTERWARN BLDR 45897.

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

JULY 1980

DAY OF MONTH	FREQUENCY	STATION	TYPE		STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} MEAN	INT	POLARIZATION OR REMARKS
01	260	ONDR	44	NS	0550.0E		507.0D	94			
	2800	TYKW	45	C	0627.0	0630.9	7.0	7	1.5		
	3750	TYKW	5	S	0629.0	0631	5.0	2	1		
	930	BORD	46	C	0650.3	0650.8	.7	14	2		
	33	UPIC	4	S/F	0938.9	0939.1	1.9				
	29	UPIC	4	S/F	0938.9	0939.2	1.1				
	930	BORD	41	F	1140.0	1140.1	.4	78	2		
	930	BORD	41	F	1210.2	1210.5	.7	17	2		
	930	BORD	41	F	1418.8	1419	.6	20	2		
	2800	OTTA	260	FAL	1430.0	1600	90.0	-4.0	-2.0		
	9400	HUAN		C	1624.1	1627.5	8.2	311.8	124.6		L
	3200	BERN	47		1624.6	1627.0D	35.0	.0			ONLY PAPER REC
	19600	BERN	47		1625.0	1627.3	18.0	1138.0			
	11800	BERN	47		1625.0	1627.3	18.0	1706.0			
	35000	BERN	47		1625.0	1627.1	4.0U	2700.0			
	8400	BERN	47		1625.0	1627.3	18.0	1191.0			
	5200	BERN	47		1625.0	1627.6	18.0	836.0			
	2800	OTTA	47	GB	1625.9	1627.7	11.4	880.0	180.0		
	930	BORD	45	C	1626.6	1627	14.4	251	33		
	9400	HUAN	29	PBI	1632.3	1632.3	20.4	20	12.5		L
	2800	OTTA	29	PBI	1637.3	1637.3	190.0	14.0	4.7		
02	200	GORK	43	NS	0507.0		101.0		10		
	3750	TYKW	5	S	0139.9	0140.2	1.5	1.5	.5		
	3200	BERN	20		0440.7	0446.5	7.0	.0			ONLY PAPER REC
	3750	TYKW	45	C	0442.0	0444.0	7.0	13	5		
	3750	TYKW			0442.0	0446.5		12			
	2800	TYKW	45	C	0442.0	0444.2	7.0	4	2.5		
	5200	BERN	20		0443.6	0446.5	4.0	13.0			
	9400	TYKW	5	S	0445.0	0446.5	5.0	6	2		RAIN
	5730	IRKU	1	S	0446.3	0446.4	1.0	20			R
	3750	TYKW	29	PBI	0449.0		20.0	1.5	.7		
	260	ONDR	42	SER	0547.0E	0611.5	61.0	24			
	3100	CRIM	24	R	0626.0	1112.0		7			
	536	ONDR	2	S/F	0906.0	0906.6	.6	15	1		
	260	ONDR	2	S/F	0924.0	0924.7	2.0	8	1		
	260	ONDR	41	F	1109.0	1112.7	6.0	10	1		
	930	BORD	8	S	1203.8	1203.9	.2	66	2		
	536	ONDR	42	SER	1211.0	1257.6	87.0	32			
	2800	OTTA	2	S/F	1429.5	1429.5	1.0	3.8	1.9		
	930	BORD	8	S	1528.9	1528.9	.1	18	1		
	930	BORD	41	F	1628.8	1629	1.2	251	3		
	930	BORD	8	S	1719.5	1719.6	.2	42	2		
	2800	OTTA	1	S	1722.5	1723	1.5	3.0	1.5		
	930	BORD	8	S	1727.8	1728	.4	267	4		
	1000	TYKW	45	C	2120.9	2121.1	.5	190	50		
	3750	TYKW	21	GRF	2325.0	2340	80.0	2	1		
03	2930	VORD	3	S	0020.0	0020	10.0	41			
	2800	TYKW	5	S	0022.0	0023.1	4.0	15	2		
	9400	TYKW	5	S	0022.5	0023.1	2.5	95	18		
	3750	TYKW	5	S	0022.5	0023.1	2.5	30	7		
	2695	PENT	3	S	0022.5	0023	2.0	30.4	7.6		
	17000	NOBE	1	S	0022.9	0023.1	.7	47			R
	9400	TYKW	29	PBI	0025.0		5.0	3	1.5		
	3750	TYKW	29	PBI	0025.0		15.0	3	1.5		
	3750	TYKW	5	S	0135.0	0135.4	2.0	10	1.5		
	2800	TYKW	45	C	0135.0	0135.4	.6	3	1		
	9400	TYKW	45	C	0135.0	0135.4	2.5	20	5		
	2695	PENT	8	S	0135.5	0135.5	.1	8.4			
	9400	TYKW	5	S	0154.0	0154.6	.8	8	4		
	260	ONDR	42	SER	0600.0	0806.3	126.0	24			
	29	UPIC	4	S/F	0737.0	0737.4	.6				
	33	UPIC	8	S	0739.4	0739.4	.3				
	260	ONDR	42	SER	1056.0	1254.6	195.0	101			
	9400	HUAN		S	1746.9	1841.7	68.4	5.7	4		B
	2800	OTTA	240	R	2130.0	2140	10.0	2.6	1.3		
	2695	PENT	21	GRF	2330.0	2420	110.0	3.2	1.6		
	1000	TYKW	21	GRF	2350.0	2410	90.0	1	.5		
	3750	TYKW	20	GRF	2350.0	2413	90.0	3.5	1.5		
	2000	TYKW	20	GRF	2350.0	2412.4	90.0	2	.7		
	2695	PENT	1	S	2412.0	2412.5	2.0	1.2	.6		
04	1000	TYKW	45	C	0011.6	0012.6	1.4	8	1.5		
	1000	TYKW	45	C	0011.6	0012.6	1.4	8	1.5		
	260	ONDR	8	S	0650.0	0650	.2	14			
	1000	TYKW	45	C	0835.5	0835.7	.5	12	2.5		
	3100	CRIM	24	R	1100.0	1205.0		5			
	260	ONDR	42	SER	1219.0	1304	61.0	18			
	1470	POTS	40	F	1354.0	1356.8	7.0	20			
	930	BORD	41	F	1354.0	1356.5	3.5	160	4		
	29	UPIC	2	S/F	1354.6	1354.9	1.0				
	33	UPIC	2	S/F	1354.9	1355.1	.7				
	2800	OTTA	1	S	1356.0	1356.5	2.0	1.6	.8		

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DAY OF MONTH	FREQUENCY	STATION	TYPE		STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	POLARIZATION OR REMARKS
04	29	UPIC	2	S/F	1356.6	1356.7	.5				
	33	UPIC	2	S/F	1356.8	1357	.6				
05	100	GORK	43	NS	0500.0		222.0		5		
	100	HIRA	43	NS	0519.0	0547	168.0	90	10		MR
	200	HIRA	43	NS	0519.0	0538.5	83.0	20	5		MR
	200	GORK	43	NS	0523.0		173.0		5		
	200	HIRA	43	NS	2212.0	0252	400.0	45	10		
	3750	TYKW	45	C	0013.0	0020.1	10.0	18	8		
	9400	TYKW	45	C	0013.0	0020.3	10.0	30	12		
	2000	TYKW	45	C	0014.0	0017.3	10.0	42	12		
	1000	TYKW	47	GB	0014.0	0017.5	8.0	860	140		
	5730	IRKU	20	GRF	0014.0	0020.0	9.0	25			0
	500	HIRA	3	S	0014.8	0017.1	7.0	200	70		WLWR
	2695	PENT	4	S/F	0015.0	0017.5	8.0	26.0	10.0		
	17000	NOBE	20	GRF	0018.1	0020.0	12.5	16			0
	1000	TYKW	29	PBI	0022.0		45.0	2	.7		
	3750	TYKW	30	PBI	0023.0		75.0	6	2.5		
	5730	IRKU	29	PBI	0023.0		18.0	7			0
	9400	TYKW	29	PBI	0023.0		50.0	14	6		
	2000	TYKW	29	PBI	0024.0		25.0	3	1		
	3750	TYKW	5	S	0043.4	0043.7	1.0	2	.5		
	9400	TYKW	5	S	0153.0	0153.4	2.0	4	1		
	3750	TYKW	5	S	0153.0	0153.7	1.0	2	.7		
	2000	TYKW	45	C	0153.5	0153.7	.5	17	5		
	9400	TYKW	20	GRF	0157.0	0205	55.0	10	4		
	2000	TYKW	45	C	0157.0	0204.6	17.0	31	6		
	3750	TYKW	45	C	0157.0	0202.0	11.0	8	5		
	1000	TYKW	45	C	0158.3E	0159.1	15.7D	21	6 D		
	35000	NAGO	20	GRF	0201.0	0207	29.0	11			
	3750	TYKW	29	PBI	0208.0		45.0	4.5	2		
	2000	TYKW	29	PBI	0214.0		30.0	2	1		
	1000	TYKW	29	PBI	0214.0		35.0	1	.5		
	9400	TYKW	20	GRF	0350.0	0440	100.0	3	1.5		
	2000	TYKW	20	GRF	0400.0	0445	90.0	1	.5		
	3750	TYKW	20	GRF	0400.0	0445	90.0	2	1		
	100	GORK	45	C	0518.0	0519 U	1.1	180 D			
	100	GORK			0518.0	0519.6		180 D			
	260	ONDR	41	F	0520.0	0538.3	73.0	9	2		
	650	GORK	1	S	0536.0	0540.4	6.7	3			
	100	GORK	46	C	0536.0	0540.8	19.0	140			
	100	GORK			0536.0	0548.0		135			
	1000	TYKW	45	C	0606.0	0607.0	10.0	42	8		
	1000	TYKW	45	C	0619.0	0620.1	6.0	31	5		
	1000	TYKW	42	SER	0625.0	0632.1	13.0	27	2.5		
	650	GORK	2	S/F	0626.2	0627.9	6.0	4			
	234	POTS	27	RF	0713.0	0748	67.0	100			RISE+I
	260	ONDR	46	C	0718.0	0737.5	43.0	78	29		
	260	ONDR			0718.0	0741.6		74			
	260	ONDR			0718.0	0746.7		57			
	113	POTS	27	RF	0721.0E	0741	105.0D	70			RISE+I
	204	IZMI	27	RP	0725.0	0749.0	35.0	160	90		
	200	GORK	46	C	0726.2	0744.9	26.5	160			
	200	GORK			0726.2	0748.2		300 D			
	650	GORK			0727.0	0742.2		650 D			
	650	GORK	46	C	0727.0	0737.7	19.0	65			
	650	GORK			0727.0	0741.6		204			
	6100	KISV			0730.0		8.0	20 D			
	5200	BERN	45		0730.0	0742.5	40.0	84.0			
	1000	TYKW	28	PRF	0731.0	0735.1	4.5	8	2		
	536	ONDR	46	C	0731.5	0741.4	18.0	410	64		
	100	GORK			0731.5	0741.6		120 D			
	100	GORK			0731.5	0747.3		115 D			
	100	GORK			0731.5	0738.0		120 D			
	100	GORK	46	C	0731.5	0733.3	29.0	120 D			
	3200	BERN	45		0732.7	0741.7	55.0	.0			ONLY PAPER REC
	5730	IRKU			0733.0	0738.0		56			L
	5730	IRKU	45	C	0733.0	0736.8	17.0	30			L
	5730	IRKU			0733.0	0743.6		74			L
	5730	IRKU			0733.0	0739.6		51			L
	2000	TYKW	45	C	0734.0	0737.5	15.0	63	15		
	3750	TYKW	45	C	0734.0	0742.4	12.0	89	30		
	2950	GORK			0734.0	0742.8		64			
	2950	GORK	46	C	0734.0	0737.6	11.3	30			
	2950	GORK			0734.0	0746.4	61.6	9			
	930	BORD	46	C	0734.8	0741.6	15.2	413	17		
	15000	KISV			0735.0	0738		35			
	9500	POTS	29	PBI	0735.0	0742.5	55.0	50			
	15000	KISV			0735.0	0739		29			
	1470	POTS	29	PBI	0735.0	0737.7	55.0	51			
	15000	KISV	46	C	0735.0	0743	60.0	50			
	9400	TYKW	45	C	0735.0	0742.6	11.0	55	28		
	15000	KISV	29	PBI	0735.0	0744	30.0	37			
	3000	POTS	29	PBI	0735.0	0742.3	60.0	83			
	15000	KISV			0735.0	0737		31			

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05	11800	BERN	45		0735.0	0742.3	40.0U	56.0			
	8400	BERN	45		0735.0	0742.5	40.0U	56.0			
	17000	NOBE	20	GRF	0735.3	0742.3	30.0D	40			0
	808	ONDR	46	C	0735.5	0741.2	13.5	348	36		
	808	ONDR			0735.5	0742.3		338			
	1000	TYKW	47	GB	0735.5	0740.7	13.5	980	40		
	9100	GORK	46	C	0735.8	0737.9	9.3	40			
	9100	GORK	29	PBI	0735.8	0745.0	39.0	30	12		
	9100	GORK			0735.8	0742.8		60			
	950	GORK			0736.0	0742.0		148 D			
	950	GORK	46	C	0736.0	0740.8	14.2	148 D			
	33	UPIC	46	C	0736.0	0736.7	15.1				
	6100	KISV	29	PBI	0743.0	0743	50.0	70			
	9400	TYKW	29	PBI	0746.0		45.0	20	8		
	3750	TYKW	29	PBI	0746.0		45.0	10	3		
	1000	TYKW	29	PBI	0749.0		40.0	2	1		
	2000	TYKW	29	PBI	0749.0		40.0	5	2		
	3100	CRIM	3	S	0753.0	0758 U	19.0	22 D			
	1470	POTS	40	F	1010.0	1102.6	100.0	23			
	3100	CRIM	24	R	1017.0	1104.0		8			
	3000	POTS	20	GRF	1029.0U	1110.5	71.0U	15			
	33	UPIC	45	C	1030.9	1032.1	4.1				
	29	UPIC	45	C	1031.9	1032.4	1.7				
	930	BORD	45	C	1059.0	1101.4	13.0	39	9		
	808	ONDR	45	C	1059.5	1102.5	10.0	20	8		
	536	ONDR	45	C	1100.0	1105.4	12.0	52	21		
	2800	OTTA	1	S	1322.8	1323	1.0	6.0	2.6		
	2800	OTTA	8	S	1325.0	1325.4	.4	4.6			
	2800	OTTA	21	GRF	1440.0	1603	210.0	6.0	3.0		
	5200	BERN	45		1539.0	1558.0	42.0	21.0			
	7000	SAOP	45	C	1540.5	1557.9	68.8	31			8R 3PARTS
	9400	HUAN		S	1541.1	1608.7	76.2	26.4	8.3		0
	3200	BERN	45		1549.0	1609.0	33.0	.0			ONLY PAPER REC
	2800	OTTA	8	S	1549.2	1549.5	.7	7.6			
	2800	OTTA	2	S/F	1554.0	1558	9.0	5.6	2.0		
	930	BORD	46	C	1556.0	1557.1	4.0	43	5		
	11800	BERN	45		1602.7	1609.1	5.0	10.0			
	8400	BERN	45		1602.7	1609.1	10.0	15.0			
	2800	OTTA	4	S/F	1605.0	1608.7	11.5	14.4	5.0		
	930	BORD	41	F	1615.4	1615.5	1.6	30	2		
	930	BORD	8	S	1836.6	1836.6	.2	30	2		
	2800	OTTA	8	S	1856.5	1856.5	.1	3.0			
	2800	OTTA	20	GRF	2016.0	2020	35.0	2.0	1.4		
	3750	TYKW	28	PRE	2200.0	2234	34.0	5	2.5		
	9400	TYKW	28	PRE	2200.0	2233.5	33.5	8	4		
	2000	TYKW	28	PRE	2200.0	2235	35.0	4	1.5		
	1000	TYKW	28	PRE	2200.0	2236	36.0	2	1		
	2800	OTTA	21	GRF	2205.0		110.0	3.0			
	1000	TYKW	45	C	2218.0	2222.3	5.5	200	10		
	2000	TYKW	45	C	2218.0	2222.5	5.5	9	1.5		
	1000	TYKW	42	SER	2224.3	2224.6	1.0	22	3		
	9400	TYKW	45	C	2233.5	2240.2	20.5	235	70		
	17000	NOBE	29	PBI	2233.6	2242.9	46.0	54			R
	17000	NOBE	46	C	2233.6	2239.9	9.2	248			R
	3750	TYKW	45	C	2234.0	2239.4	20.0	78	22		
	2000	TYKW	45	C	2235.0	2239.8	19.0	225	25		
	2800	OTTA	46P	C	2235.0	2240	14.0	128.0	32.0		
	1000	TYKW	47	GB	2236.0	2244.6	18.0	2600	250		
	2800	OTTA	30	PBI	2249.0	2249	40.0	9.0	2.4		
	2800	OTTA	1	S	2251.0	2251.3	2.0	3.0	1.5		
	3750	TYKW	29	PBI	2254.0		145.0	12	4		
	9400	TYKW	30	PBI	2254.0		145.0	45	9		
	2000	TYKW	29	PBI	2254.0		100.0	7	2.5		
	1000	TYKW	30	PBI	2254.0		100.0	3	1.5		
	1000	TYKW	5	S	2300.4	2300.6	.6	2	.5		
	1000	TYKW	45	C	2303.0	2304.0	3.0	10	2		
06	100	HIRA	43	NS	0100.0	0626	530.0	700	100		
	200	GORK	43	NS	0258.0F		182.0D		15		
	100	GORK	44	NS	0300.0F		414.0E		10		
	127	TORN	44	NS	0730.0E		210.0D		2		V1
	9400	TYKW	5	S	0028.0	0029.5	5.0	3	1		
	100	GORK			0337.7	0343.0		1200			
	100	GORK			0337.7	0344.0		2000			
	100	GORK	46	C	0337.7	0339.4	19.0	1000			
	2000	TYKW	45	C	0417.5	0420.2	7.0	140	30		
	1000	TYKW	45	C	0417.7	0419.1	6.5	450	70		
	9400	TYKW	45	C	0418.0	0420.0	6.0	20	8		
	3750	TYKW	45	C	0418.0	0420.0	6.0	43	14		
	950	GORK	46	C	0418.0	0419.4	6.3	130			
	650	GORK			0418.0	0420.3		113			
	950	GORK			0418.0	0420.2		198			
	650	GORK	46	C	0418.0	0419.4	6.5	65			
	2950	GORK	21	GRF	0418.3	0422.1	51.0	10			
	2950	GORK			0418.4	0420.9		87			

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06	2950	GORK	46 C	0418.4	0420.4	2.0	87			
	5730	IRKU	21 GRF	0418.5	0419.9	8.0	31			R
	5730	IRKU		0418.5	0422.0		16			R
	9100	GORK	23 GRF	0419.5	0448.3	52.0	28			
	33	UPIC	45 C	0419.6	0419.7	1.3				
	29	UPIC	45 C	0419.7	0420	.7				
	17000	NOBE	28 PRE	0419.7	0424.9	19.6	10			0
	9100	GORK	2 S/F	0419.9	0420.3	3.2	17			
	9400	TYKW	30 PBI	0424.0		15.0	8	7.5		
	3750	TYKW	30 PBI	0424.0		15.0	4.5	3.5		
	2000	TYKW	30 PBI	0424.5		15.0	2	2		
	5730	IRKU	29 PBI	0426.0		13.0	9			R
	1000	TYKW	45 C	0430.0	0431.7	5.0	14	1.5		
	650	GORK	4 S/F	0430.0	0431	3.2	22			
	950	GORK	4 S/F	0430.1	0432.1	3.1	10			
	3200	BERN	4	0435.0	0444.0	19.0	.0			ONLY PAPER REC
	5200	BERN	4	0436.0	0444.0	16.5	270.0U			ONLY PAPER REC
	6100	KISV	47 GB	0437.0	0444.2	10.0	350			
	6100	KISV	29 PBI	0437.0	0447	30.0	120			
	200	GORK	46 C	0438.4	0443.3	13.5	300			
	200	GORK		0438.4	0446.2		330 D			
	19600	BERN	4	0438.7	0444.0	7.0	170.0U			ONLY PAPER REC
	11800	BERN	4	0438.7	0444.0	10.0	220.0U			ONLY PAPER REC
	8400	BERN	4	0438.7	0444.0	12.0	230.0U			ONLY PAPER REC
	5730	IRKU		0439.0	0442.0		82			L
	9400	TYKW	45 C	0439.0	0444.2	9.0	437	125		
	1000	TYKW	45 C	0439.0	0444.1	11.0	285	75		
	3750	TYKW	45 C	0439.0	0444.3	11.0	152	25		
	5730	IRKU		0439.0	0444 U		90 D			R
	5730	IRKU	45 C	0439.0	0448.0	11.0	27			0
	650	GORK		0439.0	0446.1		2027			
	650	GORK		0439.0	0443.4		204			
	650	GORK	46 C	0439.0	0442.5	9.5	65			
	17000	NOBE	29 PBI	0439.3	0447.2	26.0	26			0
	17000	NOBE	46 C	0439.3	0444.1	7.0	310			R
	2000	TYKW	45 C	0439.5	0444.3	10.5	84	23		
	9100	GORK		0439.8	0444.6		440			
	9100	GORK	46 C	0439.8	0443.8	6.5	200			
	950	GORK	46 C	0439.9	0444.5	9.5	240			
	950	GORK		0439.9	0446.1		114			
	2950	GORK	46 C	0441.8	0444.1	6.3	62			
	2950	GORK		0441.8	0444.6		84			
	9400	TYKW	29 PBI	0448.0		40.0	27	9		
	3750	TYKW	29 PBI	0450.0		35.0	6	2.5		
	2000	TYKW	29 PBI	0450.0		30.0	4	1.5		
	1000	TYKW	45 C	0523.1	0523.3	.5	7	1		
	1000	TYKW	5 S	0550.5	0550.9	1.5	2.5	1		
	536	ONDR	45 C	0611.5	0615.6	6.0	56	7.5		
	808	ONDR	45 C	0612.0	0616.3	6.5	70	9		
	2000	TYKW	45 C	0612.0	0612.8	1.5	9	4		
	1000	TYKW	45 C	0612.0	0612.5	1.5	54	9		
	950	GORK		0612.5	0616.1		47			
	950	GORK		0612.5	0618.8		51			
	950	GORK	46 C	0612.5	0615	7.5	28			
	650	GORK		0612.6	0616.2		61			
	650	GORK	46 C	0612.6	0615	7.5	41			
	2000	TYKW	45 C	0614.0	0615.8	6.0	30	3		
	1000	TYKW	45 C	0614.3	0616.5	6.0	142	15		
	930	BORD	46 C	0614.3	0616.5	5.3	264	9		
	200	GORK	2 S/F	0614.6	0615	1.7	35			
	100	GORK		0615.0	0619		120			
	100	GORK		0615.0	0616.1		120 D			
	100	GORK	46 C	0615.0	0615.2	2.7	120			
	3750	TYKW	5 S	0615.0	0615.6	2.0	1.5	.5		
	2000	TYKW	21 GRF	0652.0	0706	60.0	3	1.5		
	260	ONDR	42 SER	0652.0	0731.7	169.0	61			
	3750	TYKW	20 GRF	0653.0	0720	60.0	3	1.5		
	1000	TYKW	45 C	0653.0	0706.0	31.0	10	1		
	9400	TYKW	20 GRF	0653.0	0720	60.0	4	2		
	33	UPIC	42 SER	0653.8	0655.3	14.5				
	200	GORK	4 S/F	0655.7	0656	2.6	65			
	2800	OTTA	2 S/F	1204.0	1207.5	8.0	3.6	1.6		
	2800	OTTA	8 S	1229.6	1230	.5	5.4			
	2800	OTTA	21 GRF	1310.0	1520	205.0	3.6	1.8		
	2800	OTTA	8 S	1348.5	1349	.8	3.0	1.5		
	2800	OTTA	8 S	1739.4	1739.4	.1	3.0			
	2800	OTTA	21 GRF	1850.0	1910	70.0	2.0			
	2800	OTTA	1 S	1858.0	1859.5	2.5	1.6	.8		
	2695	PENT	4 S/F	2012.0	2014.5	4.0	38.4	12.8		
	9400	HUAN	S	2013.0	2014.7	3.7	20.3	8.5		0
	2800	OTTA	30 PBI	2016.0	2016	30.0	3.0	1.5		
	2800	OTTA	40 F	2017.0	2018.2	2.0	4.4			
	2000	TYKW		2140.0	2143.7		-3			
	1000	TYKW		2140.0	2142.0		2.5			
	2000	TYKW		2140.0	2142.8		56			

SOLAR RADIO EMISSION
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DAY OF MONTH	FREQUENCY	STATION	TYPE		STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} MEAN	INT	POLARIZATION OR REMARKS
06	1000	TYKW	40	P	2140.0	2143.5	6.0	-7	.3		
	2000	TYKW			2140.0	2144.7		34			
	3750	TYKW	5	S	2140.0	2142.0	3.0	6	1.5		
	1000	TYKW			2140.0	2143.5		-7			
	1000	TYKW			2140.0	2144.7		7			
	2000	TYKW	40	P	2140.0	2142.8	6.0	56	7		
	2800	OTTA	40	P	2141.7	2142.9	4.0	230			
	1000	TYKW			2227.0	2232.6		8			
	1000	TYKW			2227.0	2235.2		3			
	1000	TYKW			2227.0	2236.5		5			
	1000	TYKW			2227.0	2233.7		-11			
	1000	TYKW	40	P	2227.0	2233.7	20.0	-11	.2		
	1000	TYKW			2227.0	2228.7		-2			
	1000	TYKW			2227.0	2235.8		-3.5			
	2000	TYKW			2229.0	2236.6		2.5			
	2000	TYKW			2229.0	2233.7		-7			
	2000	TYKW			2229.0	2232.7		3			
	2000	TYKW	40	P	2229.0	2233.7	8.0	-7	-.1		
	3750	TYKW	40	P	2232.0	2233.7	4.0	-2.5	-.5		
	3750	TYKW			2232.0	2233.7		-2.5			
	3750	TYKW			2232.0	2232.7		2			
07	260	ONDR	43	NS	0920.0		233.0D	54			
	2000	TYKW	45	C	0101.5	0103.0	2.0	28	6		
	2695	PENT	3	S	0102.2	0103	2.0	20.0	6.8		
	3750	TYKW	5	S	0102.5	0102.8	1.5	3	1		
	1000	TYKW	5	S	0202.4	0203.0	1.0	7	2.5		
	9400	TYKW	5	S	0536.6	0536.7	1.0	9	2.5		
	9100	GORK	1	S	0536.7	0536.8	.8	12	6		
	6100	KISV	27	RF	0600.0	1030		8			
	5200	BERN	1		0956.7	0958.2	8.0	9.0			ONLY PAPER REC
	3200	BERN	1		0956.7	0958.2	13.0	.8			ONLY PAPER REC
	3000	POTS	4	S/F	0957.0	0958.4	4.0	8.1			
	6100	KISV	4	S/F	0957.0	0958.5	4.0	6			
	2950	GORK	1	S	0957.5	0958.4	3.3	6.3	3		
	9100	GORK	22	GRF	0957.6	1017.8	44.5	7	3		
	9500	POTS	1	S	0958.0	0959	2.0	4.8			
	100	GORK	46	C	1013.7	1016.6	12.4	200			
	100	GORK			1013.7	1022.8		200 D			
	33	UPIC	41	F	1013.9	1016.7	8.1				
	29	UPIC	41	F	1014.2	1017.1	9.6				
	3000	POTS	20	GRF	1015.0	1030	32.0	8.1			
	1470	POTS	20	GRF	1015.0	1018	8.0	4			
	9500	POTS	20	GRF	1015.0	1015.7	8.0	4.8			
	200	GORK	46	C	1015.3	1016.8	7.4	60			
	200	GORK			1015.3	1019.6		20			
	3100	CRIM	1	S	1058.0	1058.0	5.0	7	2		
	3000	POTS	40	F	1110.0	1150.5	44.0	13			
	3100	CRIM	20	GRF	1112.0	1153.0	120.0	4	2		
	7000	SAOP	45	C	1112.0	1150.7	78.0	57			6R 2PARTS
	6100	KISV			1115.0	1137		5			
	6100	KISV			1115.0	1149.8		16 D			
	6100	KISV			1115.0	1119		5			
	6100	KISV	46	C	1115.0	1150.5	55.0	16 D			
	6100	KISV			1115.0	1117		5			
	2800	OTTA	21	GRF	1115.0	1147	100.0	6.6	4.4		
	9500	POTS	40	F	1116.5	1150.6	52.0	38			
	1470	POTS	40	F	1116.5	1143.5	44.0	12			
	9100	GORK	22	GRF	1116.7	1116.9	13.2	16			
	2800	OTTA	8	S	1116.9	1116.9	.1	4.8			
	2800	OTTA	8	S	1120.3	1120.3	.1	5.2			
	536	ONDR	46	C	1137.5	1141.8	14.0	50	3		
	9100	GORK	29	PBI	1139.9	1151.8	38.0E	12			
	9100	GORK			1139.9	1150.7		40			
	650	GORK			1139.9	1151.3		24			
	9100	GORK	46	C	1139.9	1143.9	11.8	26			
	650	GORK	46	C	1139.9	1142.5	12.2	50			
	3200	BERN	21		1141.5	1150.5	16.0	.8			ONLY PAPER REC
	5200	BERN	21		1141.5	1150.7	30.0	28.0			ONLY PAPER REC
	2800	OTTA	1	S	1142.0	1143.2	2.0	5.4	1.8		
	3100	CRIM			1142.0	1150.0		10			
	3100	CRIM	45	C	1142.0	1143.5	12.0	9	3		
	2950	GORK	20	GRF	1142.0	1143.7	11.3	7.5			
	930	BORD	41	F	1142.3	1142.4	1.7	17	3		
	950	GORK	40	F	1142.4	1143.3	9.2	7.7			
	33	UPIC	4	S/F	1144.0	1144	.6				
	29	UPIC	8	S	1144.0	1144.3	.6				
	9400	HUAN		S	1148.7	1150.5	2.9	22.8	10.9		R
	2800	OTTA	2	S/F	1149.2	1150.5	3.0	5.4	3.0		
	2800	OTTA	21	GRF	1300.0	1335	180.0	3.6	2.8		
	7000	SAOP	45	C	1315.2	1404.3	11.4	89			5R 2PARTS
	9400	HUAN		S	1354.8	1355.5	3.2	32	12.9		R
	1470	POTS	41	F	1355.0	1357.5	4.5	6.4			
	3200	BERN	21		1355.0	1404.3	16.0	.8			ONLY PAPER REC
	5200	BERN	21		1355.0	1404.3	22.0	48.0			ONLY PAPER REC

SOLAR RADIO EMISSION
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DAY OF MONTH	FREQUENCY	STATION	TYPE	STARTING TIME	TIME OF MAXIMUM	DURATION	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1}		INT	POLARIZATION OR REMARKS
				UT	UT	MINUTES	PEAK	MEAN		
07	2800	OTTA	45 C	1355.2	1355.7	4.0	7.2	3.6		
	3000	POTS	3 S	1356.0	1357.5	1.7	6.7			
	9400	HUAN	S	1402.2	1404.2	3.0	60.9	26.2		R
	3000	POTS	3 S	1402.3	1404.5	4.2	25			
	9500	POTS	3 S	1402.5	1404	4.0	52			
	930	BORD	45 C	1402.7	1403.3	5.3	59	25		
	1470	POTS	4 S/F	1403.0	1404.5	8.0	18			
	9400	HUAN	29 PBI	1406.0	1406	9.4	6.1	2.1		0
	2800	OTTA	22 GRF	1605.0	1617	30.0	2.8	1.0		
	9400	HUAN	S	1610.1	1620.3	23.3	5.7	2.3		0
	7000	SAOP	40 F	1724.0						
	7000	SAOP	45 C	1745.4	1753.2	11.0	32			7L
	3200	BERN	22	1746.0	1754.1	23.0	.0			ONLY PAPER REC
	930	BORD	45 C	1751.0	1753.2	9.0	30	9		
	9400	HUAN	F	1751.2	1753.2	9.4	35.4	12.2		0
	2800	OTTA	46F C	1751.5	1753.9	9.0	13.6	4.8		
	5200	BERN	22	1751.5	1754.0	12.0	17.0			ONLY PAPER REC
	9400	HUAN	S	2113.0	2114.2	2.5	17	9.2		0
	9400	TYKW	45 C	2113.8	2114.4	4.0	12	4		
	9400	HUAN	29 PBI	2115.5	2115.5	15.9	4.2	3.4		0
	5730	IRKU	2 S	2342.0	2343.4	5.0	20			R
	2000	TYKW	5 S	2343.0	2344.5	3.0	2	.7		
	3750	TYKW	5 S	2343.0	2344.3	5.0	12	3		
	2695	PENT	1 S	2343.0	2344.5	3.0	5.0	2.5		
	1000	TYKW	45 C	2343.7	2343.9	1.0	8	2		
08	200	HIRA	44 NS	0010.0E	0412	600.0D	7	4		WR
	200	GORK	43 NS	0305.0		183.0		5		
	260	ONDR	44 NS	0540.0E		514.0D	28			
	200	HIRA	44 NS	2330.0E	0656	620.0D	20	10		WR
	100	HIRA	44 NS	2330.0E	0213	330.0D	25	10		WL
	2000	TYKW	5 S	0001.0	0001.5	1.0	1.5	.4		
	2000	TYKW	45 C	0051.0	0051.5	4.0	8	2		
	1000	TYKW	45 C	0051.0	0052.9	4.0	13	1.5		
	3750	TYKW	45 C	0051.0	0053	3.0	3	1		
	9400	TYKW	45 C	0051.0	0052.7	3.0	9	2		
	2695	PENT	45 C	0051.0	0051.5	3.0	8.0	2.0		
	5730	IRKU	1 S	0057.5	0058.2	1.0	7			0
	3750	TYKW	5 S	0057.5	0058.2	1.5	3	1		
	9400	TYKW	5 S	0057.5	0058.2	1.5	4	1.5		
	2000	TYKW	5 S	0057.8	0058.2	1.0	2	1		
	1000	TYKW	5 S	0058.0	0058.3	2.0	1.5	.5		
	5730	IRKU	1 S	0219.5	0219.9	1.0	5			L
	9400	TYKW	5 S	0239.6	0239.8	1.0	10	2.5		
	2000	TYKW	5 S	0239.7	0239.9	1.0	1.5	.5		
	1000	TYKW	5 S	0239.7	0240.0	1.5	2	.5		
	1000	TYKW	45 C	0620.4	0622.4	2.3	10	1		
	536	ONDR	2 S/F	0621.8	0621.8	1.0	28			
	930	BORD	46 C	0622.2	0622.5	.5	41	2		
	930	BORD	41 F	1309.0	1009.4	1.6	34	2		
	536	ONDR	8 S	1111.2	1111.2	.2	58			
	930	BORD	8 S	1138.5	1138.5	.1	13	1		
	234	POTS	4 S/F	1207.8	1208.1	.6	100	10		III
	536	ONDR	8 S	1227.2	1227.2	.2	39			
	2800	OTTA	8 S	1719.4	1719.4	.1	9.0			
	2800	OTTA	240 R	1730.0	1820	50.0	2.8	1.4		
	7000	SAOP	20 GRF	1852.0			12			20L
	2800	OTTA	1 S	1951.0	1952.5	3.0	3.4	1.0		
	9400	HUAN		2008.6	2010.1		44.4			
	9400	HUAN	F	2008.6	2009.1	2.0	30.7	22.8		L
	2695	PENT	46F C	2008.8	2010	6.5	22.2	8.2		
	9400	HUAN	29 PBI	2010.6	2010.6	14.0	6.8	4.4		L
	2800	OTTA	8 S	2036.0	2036	.1	4.8			
	9400	HUAN	S	2058.3	2059.2	2.0	8.5	3.4		0
	2800	OTTA	41 SER	2059.0	2059.2	15.0	11.8			
	2800	OTTA	3 S	2059.0	2059.2	1.0	11.8	5.9		
	2000	TYKW	5 S	2059.0	2059.2	1.0	5	1		
	3750	TYKW	5 S	2059.0	2059.2	1.0	11	4		
	1000	TYKW	5 S	2059.0	2059.2	.5	2.5	1		
	3750	TYKW	5 S	2106.0	2106.3	1.0	11	4		
	2800	OTTA	1 S	2106.0	2106.3	2.0	9.0	3.0		
	1000	TYKW	8 S	2106.2	2106.3	.3	5	1.5		
	3750	TYKW	5 S	2112.0	2112.7	1.5	9	3		
	2000	TYKW	5 S	2112.0	2112.0	2.0	3 U	1 U		
	1000	TYKW	5 S	2112.0	2112.7	1.5	7	.7		
	2800	OTTA	1 S	2112.0	2113	2.0	3.6	1.4		
	2000	TYKW	5 S	2157.5	2158.2	3.5	15	4		
	3750	TYKW	5 S	2157.5	2158.1	2.5	40	10		
	2800	OTTA	3 S	2157.7	2158	4.0	30.0	7.4		
	1000	TYKW	5 S	2157.9	2158.2	.6	23	4		
	9400	HUAN	S	2158.1	2158.2	1.1	30.7	16.5		L
	2800	OTTA	1 S	2205.2	2206	4.0	6.0	3.0		
	3750	TYKW	5 S	2205.5	2206.3	2.5	8	3		
	2000	TYKW	5 S	2205.5	2206.3	2.5	4	1.5		
	1000	TYKW	8 S	2230.7	2230.8	.2	61	20		

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DAY OF MONTH	FREQUENCY	STATION	TYPE	STARTING TIME	TIME OF MAXIMUM	DURATION	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1}		INT	POLARIZATION OR REMARKS
				UT	UT	MINUTES	PEAK	MEAN		
08	1000	TYKW	45 C	2248.9	2249.2	.6	185	30		
	2695	PENT	240 R	2305.0	2315	10.0	2.8	1.4		
	1000	TYKW	45 C	2330.9	2331.0	.4	22	7		
	1000	TYKW	45 C	2332.4	2332.7	.5	47	8		
	1000	TYKW	45 C	2333.0	2334.4	1.5	133	10		
09	200	GORK	44 NS	0308.0E		586.0D		15		
	260	ONDR	44 NS	0550.0E		503.0D	216 D	6		
	29	UPIC	43 NS	0606.0	0758.5	560.4				
	33	UPIC	43 NS	0606.0	0758.1	560.0				
	200	HIRA	44 NS	2357.0E	0317	600.0D	25	5		0
	1000	TYKW	45 C	0004.9	0005.2	1.4	188	20		
	1000	TYKW		0004.9	0005.7		120			
	5730	IRKU	2 S	0005.0	0005.8	3.0	31			R
	3750	TYKW	5 S	0005.0	0005.9	5.0	25	8		
	2695	PENT	3 S	0005.0	0006	5.0	15.8	5.2		
	5730	IRKU	29 PBI	0008.0		7.0	6			R
	2000	TYKW	5 S	0008.0E	0008 U	2.0D	3.5D	3 D		
	2000	TYKW	29 PBI	0010.0		20.0	2.5	1		
	3750	TYKW	29 PBI	0010.0		20.0	3	1.5		
	1000	TYKW	8 S	0017.0	0017.9	.3	5	1.5		
	1000	TYKW	45 C	0030.6	0030.7	.3	22	5		
	1000	TYKW		0103.3	0103.8		100			
	1000	TYKW	42 SER	0103.3	0103.4	1.5	185	15		
	1000	TYKW	45 C	0111.8	0111.9	.5	17	3		
	1000	TYKW	45 C	0125.6	0125.7	.5	125	25		
	1000	TYKW	8 S	0130.4	0130.5	.2	103	15		
	1000	TYKW	8 S	0132.7	0132.9	.3	21	5		
	1000	TYKW	8 S	0133.5	0133.7	.3	79	15		
	2000	TYKW	5 S	0145.5	0146.0	5.0	10	2.5		
	3750	TYKW	5 S	0145.5	0146.0	4.0	17	4		
	9400	TYKW	5 S	0145.5	0145.9	1.5	6	2		
	1000	TYKW	45 C	0145.5	0146.0	1.0	255	60		
	2695	PENT	3 S	0145.5	0146	2.0	10.6	4.0		
	5730	IRKU	1 S	0145.6	0145.9	15.0	17			R
	1000	TYKW	45 C	0215.0	0216.1	2.0	32	9		
	2000	TYKW	5 S	0215.0	0215.3	4.0	5	2		
	3750	TYKW	5 S	0215.0	0215.3	4.0	4.5	1.5		
	1000	TYKW	45 C	0221.5	0221.8	.5	30	7		
	3750	TYKW	5 S	0503.0	0504	3.0	2.5	1		
	100	GORK		0652.3	0654.7U		200 D			
	100	GORK		0652.3	0654		200			
	100	GORK	41 F	0652.3	0652.4	3.2	200 D			
	930	BORD	41 F	0658.0	0659.2	1.6	30	2		
	2000	TYKW	45 C	0658.0	0659.3	2.0	3	.5		
	1470	POTS	1 S	0658.0	0659.3	3.0	3.6			
	1000	TYKW	45 C	0658.0	0659.3	4.0	16	2		
	200	GORK	27 RF	0718.0	0733.2	39.8	25			
	204	IZMI	4 S/F	0757.0	0757.5	1.0	360	200		
	3750	TYKW	45 C	0757.3	0757.8	1.5	8	2		
	500	HIRA	3 S	0757.3	0757.7	9.0	8	5		WR
	930	BORD	3 S	0757.4	0758	4.6	21	10		
	2000	TYKW	5 S	0757.4	0757.9	4.5	20	3.5		
	1000	TYKW	5 S	0757.4	0758.1	10.0	20	5		
	113	POTS	4 S/F	0757.5	0757.8	1.4	2100	350		III
	3000	POTS	3 S	0757.5	0757.7	1.0	17			
	1470	POTS	3 S	0757.5	0758	5.5	22			
	234	POTS	4 S/F	0757.6	0757.8	.7	100	30		III
	650	GORK	3 S	0757.6	0758.2	13.5	8.5			
	200	GORK	4 S/F	0757.6	0758.3	1.9	60 D			
	100	HIRA	46 C	0757.6	0757.9	6.0	9000	540		ML
	200	HIRA	46 C	0757.7		1.2	100 D			0
	100	GORK	4 S/F	0757.7	0758 U	8.0	160 D			
	950	GORK	3 S	0757.7	0758	6.0	13			
	2950	GORK	1 S	0757.8	0758.1	2.0	14.5			
	1000	TYKW	45 C	0832.0	0833.3	2.0	6	1.5		
	234	POTS	8 S	1010.5	1010.6	.2	170	40		
	9400	HUAN	S	1215.6	1223.2	25.5	11.8	4		0
	10715	DWIN	1 S	1220.0	1221	5.0	45	20		
	2650	DWIN	1 S	1220.0	1221	10.0	20	10		
	3000	POTS	29 PBI	1220.5	1221.4	9.5	23			
	5200	BERN	3	1220.5	1221.0	10.0	30.0			
	2800	OTTA	3 S	1220.5	1221	9.0	17.6	4.8		
	7000	SAOP	4 S/F	1220.6	1221.1	4.1	91			7L
	9400	HUAN	S	1220.7	1221.1	1.6	111.2	43.4		L
	11800	BERN	3	1220.7	1221.0	2.0U	80.0			
	1470	POTS	29 PBI	1220.7	1221.6	20.0	10			
	9500	POTS	29 PBI	1221.0	1221.1	8.0	93			
	19600	BERN	21	1221.0	1221.0	10.0	60.0			
	9100	GORK	3 S	1221.0	1221.3	.9	110			
	2950	GORK	3 S	1221.0	1221.5	7.0	18.3			
	9100	GORK	29 PBI	1221.0	1221.9	8.7	16			
	3100	CRIM	3 S	1222.4	1225.0	6.0	19	6		
	113	POTS	8 S	1249.6	1249.6	.1	100	30		III
	5200	BERN	45	1514.0	1516.2	10.0	32.0			

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DAY OF MONTH	FREQUENCY	STATION	TYPE		STARTING TIME	TIME OF MAXIMUM	DURATION	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1}		INT	POLARIZATION OR REMARKS
					UT	UT	MINUTES	PEAK	MEAN		
09	11800	BERN	45		1514.0	1516.2	4.0U	69.0			
	930	BORD	45	C	1514.0	1516.5	7.0	168	22		
	10715	DWIN	45	C	1514.0	1517	6.0	30	20		
	9400	HUAN		F	1514.3	1516.3	7.5	70.7	22.1		L
	7000	SAOP	45	C	1514.6	1516.3	6.0	18			8L 2PARTS
	2800	OTTA	4	S/F	1514.8	1517	7.2	46.4	21.2		
	19600	BERN	45		1515.0	1515.1	2.0U	83.0			
	2800	OTTA	29	PBI	1522.0	1522	15.0	9.6	3.0		
	9400	HUAN		S	2156.7	2158.1	2.3	10.1	5.6		0
	2800	OTTA	2	S/F	2157.0	2158	2.0	3.2	1.6		
	2800	OTTA	41	SER	2157.0	2204.7	13.0	75.2			
	3750	TYKW	5	S	2157.0	2157.9	2.0	3	1		
	9400	TYKW	5	S	2157.0	2157.9	2.0	10	2.5		
	2000	TYKW	45	C	2157.0	2157.4	2.0	29	3		
	1000	TYKW	5	S	2157.2	2157.9	1.5	19	5		
	1000	TYKW	5	S	2203.5	2204.7	2.5	16	4		
	3750	TYKW	5	S	2203.7	2204.7	1.5	66	13		
	2000	TYKW	5	S	2203.7	2204.7	1.5	50	10		
	2800	OTTA	3	S	2203.8	2204.7	2.0	75.2	10.0		
	9400	HUAN	8	S	2204.1	2204.5	.9	116.2	53.5		R
	9400	TYKW	5	S	2204.4	2204.6	.8	120	25		
	17000	NOBE	8	S	2204.5	2204.6	.4	80			R
	1000	TYKW	30	PBI	2206.0		2.0	2	1.7		
	9400	TYKW	5	S	2208.0	2209	2.0	4	2		
	3750	TYKW	5	S	2208.0	2208.7	2.0	8	2		
	1000	TYKW	5	S	2208.0	2208.7	3.0	4	1.5		
	2000	TYKW	5	S	2208.4	2208.7	1.6	7	2		
	2800	OTTA	1	S	2208.5	2208.9	1.5	6.4	2.8		
	2800	OTTA	31	ABS	2210.0	2210	40.0	-4.0	-2.0		
	3750	TYKW	31	ABS	2210.0	2220	40.0	-4	-2		
	9400	TYKW	31	ABS	2210.0	2220	30.0	-4	-2		
	2000	TYKW	31	ABS	2210.0	2220	40.0	-3	-1.5		
	1000	TYKW	31	ABS	2211.0	2220	33.0	-2	-1		
	1000	TYKW	45	C	2258.4	2259.3	2.0	7	1.5		
10	200	GORK	44	NS	0258.0F		443.0D		10		
	100	GORK	43	NS	0454.5		108.0		5		
	260	ONDR	44	NS	0548.0E		499.0D	64	3		
	1000	TYKW	42	SER	0227.7	0228.3	1.1	4	1		
	1000	TYKW	45	C	0240.5	0242.1	3.0	47	10		
	2000	TYKW	45	C	0241.0	0242.1	3.0	10	.5		
	3750	TYKW	5	S	0241.0	0242.1	3.0	2	.5		
	1000	TYKW	45	C	0244.1	0244.3	.3	1.5	.5		
	1000	TYKW	45	C	0245.3	0245.4	.3	5	2.5		
	1000	TYKW	5	S	0246.7	0247.3	2.0	30	10		
	2000	TYKW	5	S	0247.0	0247.4	2.5	2	.7		
	9400	TYKW	5	S	0247.0	0247.3	3.0	3	1.5		
	3750	TYKW	5	S	0247.0	0247.3	2.0	2	.7		
	200	HIRA	46	C	0355.9	0356.6	1.0	110	30		0
	9400	TYKW	20	GRP	0450.0	0510	80.0	3	1.5		
	3750	TYKW	20	GRP	0450.0	0500	80.0	2	1		
	2000	TYKW	20	GRP	0450.0	0500	40.0	1.5	.5		
	536	ONDR	42	SER	0615.5	0618.5	7.0	273			
	6100	KISV	4	S/F	0617.0	0618.5	2.0	8			
	9400	TYKW	5	S	0617.0	0618.6	3.0	7	2.5		
	1000	TYKW	45	C	0618.0	0618.7	6.0	29	3		
	3100	CRIM	1	S	0618.0	0618.5	1.5	15	5		
	2000	TYKW	5	S	0618.0	0618.7	1.0	200	25		
	3750	TYKW	5	S	0618.0	0618.8	1.5	29	4		
	950	GORK			0618.0	0620.8		8			
	950	GORK	41	F	0618.0	0618.7	4.3	14			
	930	BORD	41	F	0618.0	0618.7	4.4	20	3		
	9100	GORK	1	S	0618.0	0618.6	1.1	7	3		
	500	HIRA	46	C	0618.1	0618.2	1.0	2200	800		0
	650	GORK	3	S	0618.2	0618.5	.8	79			
	2950	GORK	8	S	0618.3	0618.8	.8	188			
	9400	TYKW	29	PBI	0620.0		20.0	2	1		
	9500	POTS	1	S	0910.0	0910.5	1.0	6.4			
	29	UPIC	42	SER	0918.6	0943.2	106.3				
	33	UPIC	42	SER	0918.8	0943.1	107.0				
	234	POTS	8	S	0919.2	0919.3	.2	1400	500		III
	113	POTS	4	S/F	0919.3	0919.3	.6	6000	200		III
	3100	CRIM	25	R	0936.0	1038.0		4			
	1470	POTS	1	S	0943.0	0943.5	1.0	2.7			
	650	GORK	3	S	0943.2	0943.7	.7	21			
	536	ONDR	4	S/F	0943.2	0943.8	1.0	36	7		
	100	GORK			0943.3	0944.7U		150 D			
	950	GORK	3	S	0943.3	0943.7	1.0	15			
	100	GORK	45	C	0943.3	0943.5U	2.5	150 D			
	930	BORD	46	C	0943.3	0943.5	.6	41	3		
	200	GORK	4	S/F	0943.4	0944.8	2.0	60 D			
	2950	GORK	2	S/F	0943.4	0943.8	.8	8.6			
	113	POTS	41	F	0943.4	0944.8	1.6	1500	50		
	3000	POTS	2		0943.4	0943.7	.6	7.8			
	3000	POTS	40	F	0958.0	1018	27.0	12			

SOLAR RADIO EMISSION
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DAY OF MONTH	FREQUENCY	STATION	TYPE	STARTING TIME	TIME OF MAXIMUM	DURATION	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1}		INT	POLARIZATION OR REMARKS
				UT	UT	MINUTES	PEAK	MEAN		
10	113	POTS	42 SER	1000.6	1003.6	53.0	6000	1 D		III
	6100	KISV	1 S	1017.0	1018	2.0	10			
	2950	GORK	2 S/F	1017.4	1018.1	5.0	7.5			
	6100	KISV	1 S	1019.5	1020	1.0	6			
	100	GORK	41 F	1050.6	1050.8	16.5	200 D			
	100	GORK		1050.6	1104.2		1000			
	234	POTS	42 SER	1051.9	1053.5	1.8	120	4		III
	536	ONDR	2 S/F	1102.8	1103.7	1.5	21	2		
	2950	GORK	3 S	1103.0	1103.5	4.8	57	28		
	2650	DWIN	1 S	1103.0	1103	2.0	65	30		
	7000	SAOP	8 S	1103.0	1103.5	.2	196			2R
	10715	DWIN	8 S	1103.0			110			
	3000	POTS	3 S	1103.0	1103.5	2.0	51			
	3100	CRIM	3 S	1103.0	1103.5	4.0	11	4		
	2800	OTTA	3 S	1103.0	1103.5	2.0	75.0	10.0		
	5200	BERN	8	1103.1	1103.5	1.0E	158.0			
	950	GORK	3 S	1103.1	1103.5	2.6	11			
	9100	GORK	3 S	1103.2	1103.4	.7	200	80		
	650	GORK	3 S	1103.2	1103.4	11.0	9			
	204	IZMI	8 S	1103.2	1104.0	1.0	5400	3000		
	9500	POTS	8 S	1103.3	1103.4	.7	120			
	19600	BERN	8	1103.3	1103.5	1.0E	210.0			
	930	BORD	3 S	1103.3	1103.6	2.0	30	4		
	1470	POTS	3 S	1103.4	1104.1	4.1	15			
	113	POTS	8 S	1103.7	1103.8	.8	6000 D	2000 D		III
	234	POTS	8 S	1103.7	1103.8	.3	9000	3000		III
	2800	OTTA	240 R	1400.0	1420	20.0	3.2			
	5200	BERN	1	1402.0	1403.5	1.0	10.0			
	3000	POTS	1 S	1402.0	1403.8	4.0	3.9			
	234	POTS	4 S/F	1426.1	1426.5	.7	750	40		III
	113	POTS	4 S/F	1426.4	1426.5	.6	5000	1000		III
	5200	BERN	46	1500.0	1530.5	120.0	15.0			
	7000	SAOP	20 GRF	1522.0			12			2L
	2800	OTTA	21 GRF	1525.0	1550	125.0	3.4	1.8		
	2800	OTTA	1 S	1529.0	1531	5.0	3.2	2.0		
	9400	HUAN	S	1546.4	1606.5	40.2	3.5	1.7		8
	2800	OTTA	23 GRF	1735.0	1905	205.0	4.8	2.4		
	29	UPIC	4 S/F	1736.6	1737.1	.9				
	2800	OTTA	8 S	1737.3	1737.4	.4	2.4			
	2800	OTTA	1 S	1741.0	1741.8	2.5	2.0	1.0		
	2800	OTTA	2 S/F	1834.0	1837	5.0	2.0	1.6		
	2800	OTTA	1 S	1848.0	1849.5	3.0	3.2	1.5		
	2695	PENT	260 FAL	2230.0	2400	90.0	-4.4	-2.2		
11	260	ONDR	44 NS	0547.0E		503.0D	152	5		
	33	UPIC	43 NS	0932.5	1105.3	342.4				
	29	UPIC	43 NS	0932.9	1255.2	341.7				
	2950	GORK	1 S	0528.3	0531.8	4.9	5.6	2.8		
	5200	BERN	1	0531.0	0531.5	2.0	8.0			
	2000	TYKW	5 S	0531.1	0531.6	1.5	4	1		
	3750	TYKW	5 S	0531.1	0531.6	1.5	7	1		
	1000	TYKW	5 S	0531.3	0531.6	3.5	3	1		
	200	GORK	4 S/F	0531.5	0531.8	1.3	90 D			
	100	GORK	8 S	0531.6	0532.5U	2.2	200			
	100	HIRA	46 C	0531.7	0532	1.9	540	150		WL
	2000	TYKW	31 ABS	0532.6	0554	50.4	-4.5	-2.5		
	3750	TYKW	31 ABS	0532.6	0550	51.4	-6	-3.5		
	200	GORK	4 S/F	0618.9	0620.1	1.5	90			
	2000	TYKW	45 C	0623.0	0625	10.0	2	.7		
	3750	TYKW	45 C	0624.0	0625	7.0	2	1		
	2950	GORK	1 S	0624.4	0627	6.3	3.4			
	930	BORD	8 S	0704.3	0704.3	.1	13	1		
	3000	POTS	20 GRF	0743.0	0753.7	40.0	13			
	6100	KISV	4 S/F	1052.0	1053.3	2.0	37			
	5200	BERN	41	1052.0	1053.2	9.0	33.0			
	10715	DWIN	2 S/F	1052.0	1053	2.0	20	10		
	2650	DWIN	2 S/F	1052.0	1053	2.0	20	10		
	9100	GORK	46 C	1052.4	1053.4	8.0	45			
	9100	GORK		1052.4	1059.4		20			
	9100	GORK	29 PBI	1052.4	1104	86.0E	11			
	2950	GORK	4 S/F	1052.5	1053.3	1.9	19			
	9500	POTS	3 S	1052.5	1053.5	2.0	29			
	1470	POTS	3 S	1052.5	1053.5	2.0	15			
	3200	BERN	41	1052.5	1053.2	8.0	.0			ONLY PAPER REC
	3000	POTS	3 S	1052.5	1053.2	2.0	24			
	127	TORN	45 C	1052.7	1053.8	1.5	510	150		
	930	BORD	46 C	1052.7	1053.2	1.3	35	2		
	204	IZMI	7 C	1052.8	1053.5	1.2	213	135		
	200	GORK	4 S/F	1052.9	1053.6	1.3	90 D			
	15000	KISV	4 S/F	1053.0	1053.5	1.0	28			
	113	POTS	4 S/F	1053.1	1053.5	.7	350	35		III
	100	GORK		1053.3	1059.7U		180 D			
	100	GORK	41 F	1053.3	1054.3U	9.2	180 D			
	2950	GORK	1 S	1058.7	1059.6	1.7	11			
	950	GORK	2 S/F	1059.0	1059.7	1.7	7			

SOLAR RADIO EMISSION
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DAY OF MONTH	FREQUENCY	STATION	TYPE		STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	POLARIZATION OR REMARKS
11	3000	POTS	3	S	1059.0	1059.5	1.0	12			
	6100	KISV	4	S/F	1059.0	1059.5	1.0	12			
	1470	POTS	1	S	1059.0	1059.5	1.5	2.3			
	9500	POTS	1	S	1059.0	1059.5	2.0	6.4			
	930	BORD	41	F	1059.3	1059.6	1.0	20	2		
	930	BORD	46	C	1109.0	1109.1	.2	14	2		
	1470	POTS	8	S	1203.9	1204.1	.6	12			
	3000	POTS	40	F	1245.0	1250.7	44.0	13			
	1470	POTS	40	F	1246.0	1251	12.0	4.6			
	9500	POTS	40	F	1247.0	1255.6	12.0	9.5			
	7000	SAOP	41	F	1248.0						
	7000	SAOP	3	S	1248.0	1250.9	.8	17			20L
	11800	BERN	41		1249.0U	1255.7	11.0U	13.0			
	5200	BERN	41		1249.0	1255.7	11.0	13.0			
	6100	KISV	3	S	1250.0	1250.8	15.0	12			
	3200	BERN	41		1250.5	1251.0	0.0	.0			ONLY PAPER REC
	7000	SAOP	3	S	1255.4	1255.8	1.6	17			24L
	6100	KISV	3	S	1255.5	1255.7	1.0	13			
	113	POTS	42	SER	1255.7	1255.8	4.4	2000	15		III
	2800	OTTA	1	S	1255.7	1255.8	2.0	5.4	1.4		
	930	BORD	46	C	1409.4	1409.8	1.0	18	2		
	5200	BERN	1		1409.5	1409.7	1.0	5.0			
	3000	POTS	1	S	1409.5	1409.9	1.0	5			
	1470	POTS	1	S	1409.5	1409.8	1.0	4.2			
	9500	POTS	8	S	1412.2	1412.4	.4	14			
	9400	HUAN		S	1418.3	1431.6	28.1	5.3	3.1		8
	2800	OTTA	24	R	1420.0	1433	13.0	3.8	1.6		
	2800	OTTA	27A	RF	1420.0		60.0	3.8	3.2		
	2800	OTTA	24P	R	1433.0		42.0	3.8			
	7000	SAOP	4	S/F	1512.0	1513.0	1.0	21			23L
	7000	SAOP	41	F	1512.0						
	5200	BERN	41		1513.2	1513.7	6.0	20.0			
	2800	OTTA	8	S	1513.5	1513.8	.5	23.6	11.8		
	3200	BERN	41		1513.5	1513.6	6.0	.0			ONLY PAPER REC
	2800	OTTA	26A	FAL	1515.0	1520	5.0	-3.8	-1.8		
	7000	SAOP	4	S/F	1517.0	1517.2	1.0	15			27L
	2800	OTTA	1	S	1517.9	1518.2	1.0	2.2	1.1		
	9400	HUAN		S	1634.0	1701.7	98.5	19.5	10		L
	2800	OTTA	27A	RF	1640.0		305.0	5.4	4.6		
	2800	OTTA	24	R	1640.0	1646	6.0	5.4			
	5200	BERN	21		1640.0	1643.5	80.0D	21.0			
	7000	SAOP	4	S/F	1640.6	1643.6	44.0	31			15L
	3200	BERN	21		1641.5	1643.5	80.0D	.0			ONLY PAPER REC
	2800	OTTA	1	S	1643.0	1643.7	2.0	9.8	3.2		
	9400	HUAN		S	1643.2	1643.7	1.9	17.7	8.5		L
	2800	OTTA	24P	R	1646.0		214.0	5.4			
	2800	OTTA	22	GRF	1725.0	1740	35.0	3.0	1.2		
	9400	HUAN		S	1825.7	1835.7	14.9	8.9	2.6		8
	7000	SAOP	45	C	1850.0	1858.2	8.8	328			4L
	9400	HUAN		S	1850.7	1852.1	3.6	16	8.6		L
	2800	OTTA	1	S	1851.0	1852.5	3.0	8.8	5.0		
	9400	HUAN		C	1855.7	1858.2	6.1	278.3	85.4		L
	2800	OTTA	45	C	1856.0	1858.8	8.0	113.0	29.0		
	9400	HUAN	29	PBI	1901.8	1901.8	86.0	26.6	11.2		L
	2800	OTTA	2	S/F	1907.0	1910.1	4.0	8.8	2.2		
	2800	OTTA	26	FAL	2020.0	2145	85.0	-5.4	-2.7		
	2800	OTTA	21	GRF	2150.0	2206	115.0	6.0			
	3750	TYKW	21	GRF	2154.0	2235	115.0	4	1.5		
	2000	TYKW	45	C	2155.0	2209.1	20.0	12	2.5		
	3750	TYKW	45	C	2155.0	2209.1	20.0	33	5		
	9400	TYKW	28	PRE	2155.0	2211.9	20.7	27	7		
	2800	OTTA	8	S	2203.0	2203	.2	3.2			
	1000	TYKW	45	C	2208.0	2210.4	5.0	19	1		
	2800	OTTA	3	S	2208.0	2209	1.5	22.3	7.0		
	2800	OTTA	4	S/F	2211.0	2212	2.2	16.0	7.0		
	9400	TYKW	47	GB	2215.7	2216.4	3.3	500	120		
	2000	TYKW	5	S	2215.7	2216.5	6.0	98	20		
	3750	TYKW	5	S	2215.7	2216.5	6.0	228	45		
	2800	OTTA	3	S	2215.9	2216.6	4.0	160.0	45.0		
	1000	TYKW	45	C	2215.9	2216.1	5.0	146	15		
	17000	NOBE	4	S/F	2215.9	2216.3	1.5	364			L
	9400	TYKW	30	PBI	2219.0		90.0	18	8		
	2000	TYKW	20	GRF	2255.0	2305	55.0	3	1.5		
	3750	TYKW	21	GRF	2255.0	2305	45.0	3.5	2		
	1000	TYKW	20	GRF	2255.0	2305	55.0	1	.5		
	2695	PENT	20	GRF	2302.0	2304	35.0	3.0	2.2		
	3750	TYKW	5	S	2317.5	2318.1	2.5	8	2		
	5730	IRKU	1	S	2317.7	2318.2	1.0	11			R
	9400	TYKW	5	S	2320.0	2320.7	0.0	11	3		
	3750	TYKW	5	S	2320.5	2320.9	1.0	3.5	1		
12	200	GORK	43	HS	0300.0E		102.0D		5		
	2695	PENT	3	S	0114.0	0114.5	1.5	18.6	4.7		
	2000	TYKW	5	S	0127.0	0128.7	5.0	12	5		
	3750	TYKW	5	S	0127.0	0128.7	5.0	15	6		

SOLAR RADIO EMISSION
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JULY 1980

DAY OF MONTH	FREQUENCY	STATION	TYPE		STARTING TIME	TIME OF MAXIMUM	DURATION	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1}		INT	POLARIZATION OR REMARKS
					UT	UT	MINUTES	PEAK	MEAN		
12	2695	PENT	3	S	0127.5	0128.5	2.5	16.0	8.0		
	9400	TYKW	5	S	0127.5	0128.5	2.5	6	4		
	9400	TYKW	29	PBI	0130.0		30.0	4	2		
	2695	PENT	29	PBI	0130.0	0130	15.0D	8.2			
	3750	TYKW	30	PBI	0132.0		28.0	5	5		
	2000	TYKW	30	PBI	0132.0		28.0	3	3		
	35000	NAGO	20	GRF	0150.0	0245	82.0	17			
	35000	NAGO	20	GRF	0150.0	0245	82.0	17			
	3750	TYKW	5	S	0200.0	0234.5	100.0	17	8.5		
	9400	TYKW	20	GRF	0200.0	0235	95.0	18	9		
	2000	TYKW	5	S	0200.0	0234.6	100.0	16	5		
	1000	TYKW	45	C	0206.0	0223.9	60.0	9	1		
	2000	TYKW	45	C	0347.5	0348.2	12.5	13	6		
	1000	TYKW	5	S	0347.5	0350	12.5	5.5	3.5		
	3750	TYKW	5	S	0347.5	0348.2	5.5	13	5		
	200	GORK	4	S/F	0347.5	0348.5	1.6	85			
	100	GORK	4	S/F	0348.0	0348.6	1.0	120			
	3750	TYKW	30	PBI	0353.0		150.0	3	2		
	2000	TYKW	29	PBI	0400.0		14.0	4	2		
	1000	TYKW	30	PBI	0400.0		140.0	2	1		
	9400	TYKW	21	GRF	0410.0	0439	130.0	5	2.5		
	9100	GORK	20	GRF	0415.0	0652.5	330.0E	15			
	9400	TYKW	5	S	0417.0	0419	5.0	3	1.5		
	3750	TYKW	5	S	0435.0	0440	20.0	2	1		
	1000	TYKW	5	S	0438.0	0438.2	0.6	10	2.5		
	3750	TYKW	20	GRF	0458.0	0500	50.0	2	1		
	6100	KISV	27	RF	0656.0	0659	30.0	6			
	3000	POTS	20	GRF	0657.0	0705.5	76.0	9.6			
	9500	POTS	20	GRF	0657.0	0700	21.0	9.4			
	3100	CRIM	24	R	0751.0	0932.0	209.0D	26 U			
	9500	POTS	8	S	0800.7	0800.7	.3	157			
	9500	POTS	8	S	0808.9	0808.9	.6	55			
	5200	BERN	21		0900.0	1110.1	240.0	42.0			
	1470	POTS	8	S	0943.0	0943	.5	8			
	3200	BERN	21		1000.0	1117.2	180.0U	.0			ONLY PAPER REC
	8400	BERN	21		1000.0	1110.1	180.0U	60.0			
	1470	POTS	23	GRF	1012.0	1117.5	163.0	14			
	9500	POTS	23	GRF	1020.0	1110	165.0	68			
	3000	POTS	23	GRF	1020.0	1112	148.0	31			
	9500	POTS	23	GRF	1020.0	1117		68			
	11800	BERN	21		1020.0	1117.1	130.0	60.0			
	19600	BERN	21		1020.0U	1117.1	130.0U	60.0			ONLY PAPER REC
	2800	OTTA	21	GRF	1050.0	1115	130.0D	15.4			
	6100	KISV			1106.0	1111.7		25			
	6100	KISV	46	C	1106.0	1110.2	4.0	43			
	6100	KISV			1106.0	1112.3		20			
	6100	KISV	29	PBI	1106.0	1113	17.0	10			
	15000	KISV	46	C	1109.0	1110	4.0	27			
	15000	KISV	29	PBI	1109.0	1118	20.0	16			
	15000	KISV			1109.0	1111.5		26			
	15000	KISV			1109.0	1117		26			
	15000	KISV			1109.0	1112.3		26			
	7000	SAOP	45	C	1109.0	1110.1	42.0	61			10L
	2800	OTTA	46F	C	1110.0	1111.5	3.0	5.0	2.4		
	6100	KISV	45	C	1116.0	1117	2.0	12			
	6100	KISV			1116.0	1117.5		9			
	2800	OTTA	2	S/F	1116.7	1117.2	1.5	7.6	3.8		
	6100	KISV	4	S/F	1119.0	1119.5	1.0	7			
	260	ONDR	42	SER	1230.0	1405.8	158.0	18			
	7000	SAOP	45	C	1314.4	1343.2	72.0	70			6L 3PARTS
	5200	BERN	21		1320.0	1343.1	120.0	32.0			
	9400	HUAN		S	1330.8	1346.1	61.6	11	5		L
	2800	OTTA	21	GRF	1335.0	1410	80.0	4.6	2.3		
	3200	BERN	21		1339.0	1343.2	80.0	.0			ONLY PAPER REC
	8400	BERN	21		1340.0	1343.1	60.0	40.0			
	19600	BERN	21		1340.0U	1343.1	10.0U	40.0U			
	11800	BERN	21		1340.0	1342.1	60.0	60.0			
	113	POTS	8	S	1340.3	1340.3	.1	280	90		
	9500	POTS	29	PBI	1341.5	1343.2	14.0	55			
	9400	HUAN		S	1341.7	1343.1	2.9	62.3	21.4		L
	10715	DWIN	2	S/F	1342.0	1343	3.0	35	15		
	2800	OTTA	3	S	1342.9	1343.1	2.0	21.0	8.0		
	1470	POTS	3	S	1343.0	1343.4	2.0	8.8			
	3000	POTS	3	S	1343.0	1343.2	2.0	22			
	2650	DWIN	1	S	1343.0	1343	2.0	20	10		
	930	BORD	46	C	1343.0	1344.3	.5	146	3		
	9500	POTS	4	S/F	1359.0	1400.8	3.5	30			
	9400	HUAN		S	1359.1	1400.1	3.2	28.3	14.8		0
	3000	POTS	2	S/F	1400.0	1400.9	2.0	2.9			
	1470	POTS	1	S	1401.0	1401.5	1.0	3.1			
	930	BORD	46	C	1401.3	1401.3	.6	122	2		
	10715	DWIN	3	S	1542.0	1544	12.0	230	100		
	2650	DWIN	3	S	1542.0	1544	7.0	90	40		
	7000	SAOP	3	S	1542.0	1543.6	4.0	537			9L
	8400	BERN	3		1542.0	1543.5	7.0	370.0			

SOLAR RADIO EMISSION
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JULY 1980

DAY OF MONTH	FREQUENCY	STATION	TYPE	STARTING TIME	TIME OF MAXIMUM	DURATION	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1}		INT	POLARIZATION OR REMARKS
				UT	UT	MINUTES	PEAK	MEAN		
12	19600	BERN	3	1542.0	1543.3	6.0	530.0			
	15000	BERN	3	1542.0	1543.3	6.0U	460.0			
	11800	BERN	3	1542.0	1543.5	7.0	510.0			
	5200	BERN	3	1542.0	1543.6	7.0	300.0			
	9400	HUAN	S	1542.1	1543.4	4.6	554.9	246.8		L
	2800	OTTA	3 S	1542.5	1543.9	7.5	109.0	31.0		
	3200	BERN	3	1543.0	1543.6	80.0	.0			ONLY PAPER REC
	9400	HUAN	29 PBI	1546.7	1546.7	55.5	67.6	20.2		L
	2800	OTTA	29 PBI	1550.0	1550	60.0	3.0	1.8		
	9400	HUAN	S	1735.3	1736.2	3.9	130.5	42.6		L
	7000	SAOP	3 S	1735.4	1736.4	3.4	123			14L
	2800	OTTA	3 S	1735.5	1736.3	6.0	31.0	8.0		
	8400	BERN	3	1735.6U	1736.3	6.0U	80.0			
	3200	BERN	3	1735.6	1736.5	6.0	.0			ONLY PAPER REC
	11800	BERN	3	1735.6	1736.3	6.0D	120.0			
	19600	BERN	3	1735.6U	1736.2	6.0D	165.0			
	5200	BERN	3	1735.6	1736.4	6.0	81.0			
	9400	HUAN	29 PBI	1739.2	1739.2	78.5	11	7.9		L
	2800	OTTA	20 GRF	1801.0	1803	19.0	2.6	1.4		
	7000	SAOP	45 C	1819.2	1824	12.8	36			13L
	930	BORD	46 C	1821.0	1823.1	4.5	28	3		
	2800	OTTA	4 S/F	1821 5	1824	4.0	15.4	7.7		
	9400	HUAN	S	1821.0	1823.9	2.8	14.1	11		L
	9400	HUAN	S	2043.2	2043.7	1.6	23	14.5		L
	2800	OTTA	240 R	2200.0	2235	35.0	3.0	1.5		
	9400	TYKW	5 S	2205.0	2205.6	1.0	21	9		
	17000	NOBE	1 S	2205.3	2205.5	.6	23			L
	9400	TYKW	29 PBI	2206.0		8.0	4	2		
	17000	NOBE	1 S	2207.3	2209	6.0	17			L
	17000	NOBE	1 S	2225.7	2226.2	1.2	10			0
13	260	ONDR	44 NS	0620.0E		280.0	20			
	200	GORK	43 NS	0637.0		170.0		5		
	200	HIRA	43 NS	0640.0	0807	200.0D	5	3		WR
	200	HIRA	44 NS	2329.0E	0426	300.0D	7	3		WR
	9400	TYKW	20 GRF	0025.0	0050	45.0	3.5	2		
	3750	TYKW	20 GRF	0025.0	0050	45.0	1.5	.7		
	9400	TYKW	5 S	0113.0	0114.3	3.0	77	14		
	17000	NOBE	29 PBI	0113.5	0115	7.0	10			0
	17000	NOBE	3 S	0113.5	0114.2	1.6	90			L
	2000	TYKW	5 S	0114.0	0114.4	3.0	9	2		
	3750	TYKW	5 S	0114.0	0114.4	2.0	27	7		
	5730	IRKU	2 S	0114.0	0114.4	2.0	24			R
	9400	TYKW	29 PBI	0116.0		25.0	7	3		
	3750	TYKW	29 PBI	0116.0		30.0	3	1		
	9400	TYKW	20 GRF	0205.0	0225	35.0	3	1.5		
	3750	TYKW	20 GRF	0205.0	0225	35.0	1.5	.7		
	3750	TYKW	20 GRF	0310.0	0353	100.0	7	2.5		
	9400	TYKW	21 GRF	0335.0	0354	50.0	5	2		
	9400	TYKW	5 S	0339.0	0340.4	3.0	6	2		
	9100	GORK	22 GRF	0340.3	0354.6	19.0	8.6			
	3750	TYKW	21 GRF	0500.0	0630	230.0	8	3		
	2000	TYKW	21 GRF	0500.0	0630	240.0	4	2		
	2950	GORK	21 GRF	0521.3	0630	300.0E	8.8			
	9100	GORK	21 GRF	0549.9	0630	149.0	10			
	9400	TYKW	21 GRF	0550.0	0635	130.0	10	5		
	9400	TYKW	5 S	0600.0	0607 U	15.0	4 D	2 D		
	3750	TYKW	5 S	0604.0	0605.8	6.0	51	5		
	1000	TYKW	5 S	0604.0	0605.8	7.0	36	4		
	6100	KISV	4 S/F	0604.5	0605.7	2.0	13			
	3200	BERN	3	0604.5	0605.7	4.0	.0			ONLY PAPER REC
	15000	KISV	4 S/F	0604.5	0605.7	2.0	13			
	9100	GORK	1 S	0605.4	0605.8	1.1	22	9		
	2950	GORK	3 S	0605.5	0605.9	2.2	32	16		
	5730	IRKU	2 S	0605.5	0605.8	2.0	40			R
	5200	BERN	3	0605.5	0605.7	2.0	50.0			
	11800	BERN	3	0605.5	0605.8	2.0	20.0			
	2000	TYKW	5 S	0608.0E	0608 U	3.0D	1.5D	.5D		
	9100	GORK	22 GRF	0857.8	0926.9	44.0E	7			
	2800	OTTA	20 GRF	1050.0	1105	45.0D	4.4			
	9500	POTS	21 GRF	1103.0	1105	37.0	12			
	9500	POTS	8 S	1206.0	1206	.5	22			
	3000	POTS	8 S	1206.2	1206.5	.8	5.2			
	2800	OTTA	240 R	1220.0	1357	97.0	7.0	3.5		
	2800	OTTA	240AR	1415.0	1510	55.0	6.4	3.2		
	5200	BERN	21	1430.0U	1433.0U	5.0U	6.0U			
	3200	BERN	21	1432.0	1435.1	5.0	.0			ONLY PAPER REC
	2800	OTTA	1 S	1434.5	1435.1	4.0	7.4	2.5		
	9400	HUAN	S	1456.6	1506.2	30.1	8.3	6.3		0
	7000	SAOP	45 C	1502.0	1522.1	26.0	16			10L
	7000	SAOP	41 F	1502.0						
	9400	HUAN	S	1534.7	1536.7	3.9	6.6	3.6		L
	7000	SAOP	45 C	1534.8	1536.8		12			13L
	9400	HUAN	S	1631.6	1632.5	1.8	13.3	6.6		L
	7000	SAOP	3 S	1632.0	1632.7	8.0	20			23L

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

JULY 1980

DAY OF MONTH	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	POLARIZATION OR REMARKS
13	2800	OTTA	23 GRF	1700.0	1821	125.0	9.0	4.0		
	7000	SAOP	45 C	1707.0	1718	47.0	149			4L
	10715	DWIN	1 S	1717.0	1718	5.0	60	30		
	5200	BERN	3	1717.2	1718.0	11.0	70.0			
	11800	BERN	3	1717.2	1717.9	9.0	115.0			
	19600	BERN	3	1717.2U	1717.9	3.0U	110.0			
	3200	BERN	3	1717.6	1718.1	13.0	.0			ONLY PAPER REC
	2800	OTTA	3 S	1717.7	1718.1	2.3	42.0	21.0		
	930	BORD	41 F	1718.0	1718.2	.3	13	2		
	9400	HUAN	S	1719.0E	1719 U	2.0	36.6	23.6		L
	2800	OTTA	29 PBI	1720.0	1720	6.0	7.8	2.6		
	9400	HUAN	29 PBI	1721.0	1721	57.4	15	6.5		L
	9400	HUAN	S	1800.0	1800.9	4.8	16.6	8.9		0
	9400	HUAN	S	1914.3	1921.6	13.0	10	6.6		0
	2800	OTTA	40 F	1918.0	1918	2.0	105.0			
	2800	OTTA	23 GRF	1948.0	2015	265.0	14.6	6.8		
	2800	OTTA	2 S/F	1949.0	1950	3.0	7.0	3.5		
	3750	TYKW	45 C	2156.0	2157.5	5.0	6	2		
	3750	TYKW	21 GRF	2156.0	2234	120.0	8	4		
	9400	TYKW	45 C	2156.0	2159.3	5.0	35	14		
	9400	HUAN	S	2156.6	2159.3	5.6	29.9	10		L
	1000	TYKW	20 GRF	2200.0	2220	120.0	1	.5		
	2000	TYKW	20 GRF	2201.0	2220	120.0	7	4		
	9400	TYKW	29 PBI	2201.0		120.0	7	2.5		
14	100	GORK	44 NS	0302.0E		590.0D		10		
	200	GORK	44 NS	0302.0E		600.0D		5		
	260	ONDR	44 NS	0544.0E		515.0D	25			
	113	POTS	44 NS	0711.0E	0818	449.0D	70			
	9400	TYKW	45 C	0037.0	0042.9	20.0D	33	6 D		
	3750	TYKW	45 C	0038.0	0043	20.0	3	1		
	17000	NOBE	1 S	0042.3	0043.7	3.5	16			0
	17000	NOBE	1 S	0046.8	0048.4	3.0	13			0
	9400	TYKW	20 GRF	0149.0	0149.6	50.0	6	3		
	3750	TYKW	5 S	0149.0	0149.7	2.0	7	2.5		
	3750	TYKW	29 PBI	0151.0		50.0	2	1		
	9400	TYKW	5 S	0355.0	0357.1	3.0	25	10		
	17000	NOBE	1 S	0356.8	0357.1	.8	16			L
	9400	TYKW	29 PBI	0358.0		30.0	5	2		
	650	GORK	1 S	0605.7	0606.1	.7	4.5			
	2950	GORK	21 GRF	0643.6	0826.6	288.0	14			
	3750	TYKW	5 S	0645.0	0648	15.0	3	1		
	9400	TYKW	20 GRF	0645.0	0720	40.0	5	2		
	9100	GORK	23 GRF	0646.0	0755	349.0E	16			
	6100	KISV		0736.0	0749		30			
	6100	KISV	20 GRF	0736.0	0747	25.0	30			
	6100	KISV		0736.0	0750.0		26			
	3200	BERN	3	0742.0	0746.2	10.0	.0			ONLY PAPER REC
	15000	KISV	27 RF	0743.0	0753	13.0	16			
	3100	CRIM	1 S	0743.0	0747.0	7.0	9	3		
	9400	TYKW	45 C	0744.0	0752	20.0	29	12		
	3750	TYKW	45 C	0744.0	0747	12.0	12	5		
	6100	KISV	3 S	0744.0	0747.5	5.0	9			
	5200	BERN	3	0744.0	0747.0	11.0	19.0			
	9100	GORK	45 C	0744.4	0747.3	10.0	23			
	9100	GORK		0744.4	0752.6		23			
	3000	POTS	20 GRF	0745.0	0747.5	14.0	12			
	9500	POTS	20 GRF	0745.0	0753	13.0	20			
	19600	BERN	3	0745.0U	0752.0U	10.0U	30.0			
	11800	BERN	3	0745.0	0752.5	11.0	35.0			
	1000	TYKW	45 C	0814.2	0815.1	1.2	29	10		
	6100	KISV	47 GB	0815.0	0826	25.0	100 D			
	8400	BERN	4	0820.0	0825.3	20.0	200.0			
	19600	BERN	4	0820.0	0825.8	15.0	135.0			
	5200	BERN	4	0820.0	0825.3	50.0	93.0			
	11800	BERN	4	0820.0	0825.8	30.0	270.0			
	9500	POTS	4 S/F	0820.0	0825.6	13.0	196			
	3000	POTS	4 S/F	0820.7	0826.2	5.0	55			
	536	ONDR	41 F	0821.0	0826.7	9.0	48	2		
	10715	DWIN	45 C	0821.0	0826	15.0	100	50		
	9400	TYKW	45 C	0821.0	0825.4	20.0	235	18		
	3750	TYKW	45 C	0821.0	0825.3	15.0	68	9		
	15000	KISV	45 C	0821.0	0826	15.0	105			
	15000	KISV		0821.0	0825.3		80			
	3200	BERN	4	0822.0	0824.1	13.0	.0			ONLY PAPER REC
	2000	TYKW	45 C	0822.0	0826.1	5.0	65	12		
	808	ONDR	45 C	0822.0	0825.6	4.5	40	3		
	930	BORD	8 S	0822.0	0822.1	.2	63	2		
	1000	TYKW	8 S	0822.1	0822.2	.3	57	10		
	650	GORK	41 F	0822.7	0823.5	5.1	15			
	650	GORK		0822.7	0825.8		26			
	9100	GORK	45 C	0822.9	0825.3	6.0	250			
	9100	GORK		0822.9	0825.9		210			
	2650	DWIN	45 C	0823.0	0826	6.0	60	30		
	1470	POTS	4 S/F	0823.0	0825.5	6.0	46			

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

JULY 1980

DAY OF MONTH	FREQUENCY	STATION	TYPE		STARTING TIME	TIME OF MAXIMUM	DURATION	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1}		INT	POLARIZATION OR REMARKS
					UT	UT	MINUTES	PEAK	MEAN		
14	930	BORD	46	C	0824.0	0825.6	3.0	191	7		
	1000	TYKW	45	C	0824.0	0825.6	3.0	63	9		
	950	GORK	4	S/F	0824.4	0825.4	3.4	23			
	2950	GORK			0824.7	0826		41			
	2950	GORK	45	C	0824.7	0825.5	1.7	31			
	2000	TYKW	29	PBI	0827.0		45.0	9	3		
	3750	TYKW	29	PBI	0836.0		40.0	7	3		
	3000	POTS	1	S	1016.4	1017	1.1	8.3			
	1470	POTS	1	S	1016.5	1017.2	1.2	3.1			
	6100	KISV	3	S	1016.5	1016.8	1.0	7			
	9500	POTS	1	S	1016.9	1017	.8	4.7			
	7000	SAOP	20	GRF	1207.5			16			0
	3200	BERN	3		1217.5	1221.3	8.0	.0			ONLY PAPER REC
	2950	GORK	20	GRF	1217.0	1221.4	18.0E	11			
	9500	POTS	20	GRF	1218.0	1221.5	22.0	7.7			
	3000	POTS	20	GRF	1218.0	1221.4	12.0	10			
	2800	OTTA	20	GRF	1218.0	1221	15.0	8.6	2.8		
	5200	BERN	3		1218.0	1221.0	7.0	135.0			
	3000	POTS	21	GRF	1245.0	1252.7	30.0	14			
	9500	POTS	8	S	1251.5	1251.7	1.0	12			
	2800	OTTA	240	R	1320.0	1400	40.0	4.0	2.4		
	2800	OTTA	22	GRF	1405.0	1505	170.0	6.6	3.0		
	9400	HUAN		S	1409.7	1428.3	37.4	5.5	2.4		0
	2800	OTTA	20	GRF	1700.0	1707	120.0	7.6	2.6		
	9400	HUAN		S	1704.6	1710.6	16.7	7.3	3.9		L
	2800	OTTA	20	GRF	1940.0	1948	40.0	4.0	2.0		
	9400	HUAN		S	1946.8	1954.3	50.5	5.5	4.2		L
	9400	TYKW	5	S	2308.7	2309.0	1.0	6	2		
	3750	TYKW	5	S	2308.8	2309.1	.8	53	7		
	1000	TYKW	5	S	2308.8	2309.2	1.0	2	.5		
	2000	TYKW	5	S	2308.8	2309.1	.6	11	1		
	2695	PENT	8	S	2309.1	2309.1	.1	48.0			
	2695	PENT	20	GRF	2310.0	2340	85.0	3.6	2.6		
15	200	GORK	44	NS	0315.0E		312.0		10		
	100	GORK	44	NS	0316.0E		314.0		5		
	200	HIRA	44	NS	0516.0E	0849	250.0D	20	10		MR
	100	HIRA	44	NS	0516.0E	0522	250.0D	30	10		MR
	260	ONDR	44	NS	0530.0E		523.0D	64	3		
	127	TORN	44	NS	0700.0E	0946.5	420.0D	18	5		V1
	200	HIRA	44	NS	2330.0E	0605	620.0D	30	10		MR
	100	HIRA	44	NS	2330.0E	0255.3	620.0D	260	50		SR
	2000	TYKW	45	C	0129.0	0129.7	2.5	2.5	.7		
	9400	TYKW	45	C	0129.0	0130.3	3.0	9	2		
	3750	TYKW	45	C	0129.0	0129.6	3.0	2	.7		
	1000	TYKW	45	C	0129.5	0131.1	2.5	3	.8		
	1000	TYKW	45	C	0136.5	0137.7	3.0	11	1.5		
	3750	TYKW	5	S	0200.0	0201	2.0	1	.5		
	1000	TYKW	8	S	0206.4	0206.4	.1	9	3		
	2000	TYKW	20	GRF	0400.0	0421	60.0	3	.7		
	3750	TYKW	20	GRF	0400.0	0405	60.0	4	1.5		
	9400	TYKW	20	GRF	0402.0	0405	60.0	3	1.5		
	1000	TYKW	8	S	0453.0	0453.1	.4	13	4		
	200	GORK	46	C	0613.5	0614.5	10.0	60	D		
	200	GORK			0613.5	0622.7		60	D		
	100	GORK	46	C	0647.0	0648.7	2.4	270	D		
	100	GORK			0647.0	0648.8		270			
	1000	TYKW	45	C	0717.5	0718.0	.8	40	10		
	2000	TYKW	5	S	0717.7	0718.0	1.0	3	.7		
	2950	GORK	21	GRF	0807.0	0938.6	280.0	12			
	29	UPIC	2	S/F	0843.0	0843	.3				
	33	UPIC	2	S/F	0843.4	0843.5	.9				
	113	POTS	0	S	0843.6	0843.6	0.1	150	50		
	6100	KISV	8	S	0844.0	0845.5	4.0	27			
	536	ONDR	2	S/F	0844.8	0845.1	1.0	31	1		
	9500	POTS	3	S	0845.0	0845.5	1.5	13			
	930	BORD	8	S	0845.0	0845.4	1.0	17	2		
	2650	DWIN	1	S	0845.0	0845	1.0	20	10		
	3750	TYKW	5	S	0845.0	0845.5	1.5	26	6		
	9400	TYKW	5	S	0845.0	0845.4	1.5	16	5		
	2000	TYKW	5	S	0845.0	0845.5	1.5	10	3		
	1000	TYKW	5	S	0845.0	0845.5	1.5	5	1.5		
	9100	GORK	1	S	0845.1	0845.4	1.7	20	8		
	2950	GORK	1	S	0845.1	0845.5	.8	13	6		
	808	ONDR	8	S	0845.2	0845.2	.2	25			
	3000	POTS	1	S	0845.5	0846.0	1.5	10			
	1470	POTS	3	S	0846.0U	0846.1	0.5U	7.3			
	2650	DWIN	1	S	0854.0	0855	2.0	30	20		
	1470	POTS	4	S/F	0854.0	0855.1	3.5	16			
	930	BORD	46	C	0854.0	0854.6	2.0	28	4		
	6100	KISV	4	S/F	0854.0	0855.3	4.0	13			
	1000	TYKW	45	C	0854.0	0855.1	2.0	16	4		
	9100	GORK	22	GRF	0854.4	0855.2	10.0	17			
	9500	POTS	3	S	0854.5	0855.1	2.5	13			
	3000	POTS	3	S	0854.5	0855.1	2.0	9.2			

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DAY OF MONTH	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} MEAN	INT	POLARIZATION OR REMARKS
15	2000	TYKW	45 C	0854.5	0855.4	1.5	65	20		
	3750	TYKW	5 S	0854.5	0855.1	1.5	6	1.5		
	9400	TYKW	5 S	0854.5	0855.1	1.5	12	3		
	2950	GORK	1 S	0854.7	0855.3	1.4	9	4		
	9100	GORK	21 GRF	0926.4	0954.3	64.0	7.3			
	9500	POTS	20 GRF	0932.0	0940	18.0	4.7			
	3000	POTS	20 GRF	0935.0	0938.5	5.0	12			
	1470	POTS	1 S	0938.0	0938.5	1.0	3.6			
	3000	POTS	1 S	0953.0	0953.5	1.0	6.1			
	1470	POTS	3 S	0953.0	0953.5	1.5	6.4			
	9500	POTS	1 S	0953.0	0953.3	1.0	7.9			
	6100	KISV	8 S	0953.0	0953.5	2.0	22			
	9100	GORK	1 S	0953.2	0953.7	.8	17	7		
	536	ONDR	2 S/F	0953.3	0953.3	.5	42	2		
	2800	OTTA	20 GRF	1100.0	1120	105.0D	5.8			
	7000	SAOP	45 C	1307.0	1311.6	10.0	20			15L
	113	POTS	4 S/F	1338.3	1338.3	0.1	150	50		
	2800	OTTA	21 GRF	1410.0	1435	110.0	4.0	2.6		
	9400	HUAN	S	1412.0	1427	51.0	6.4	2.2		8
	9500	POTS	20 GRF	1425.0	1427.5	10.0	6.3			
	3000	POTS	1 S	1426.0	1427	2.0	8.2			
	2800	OTTA	1 S	1426.0	1427	2.0	2.8	1.2		
	7000	SAOP	45 C	1823.6	1827.2	3.6	172			15L
	10715	DWIN	2 S/F	1826.0	1827	4.0	25	15		
	2650	DWIN	45 C	1826.0	1827	3.0	70	20		
	9400	HUAN	F	1826.3	1827.2	5.3	93.5	30.1		L
	2800	OTTA	4 S/F	1826.3	1828	2.7	22.6	11.3		
	2800	OTTA	29 PBI	1829.0	1829	20.0	7.0	2.3		
	2800	OTTA	1 S	1950.8	1951.5	5.0	3.0	1.4		
	3750	TYKW	21 GRF	2110.0	2145	45.0	2	1		
	2000	TYKW	21 GRF	2110.0	2150	50.0	1.5	1		
	3750	TYKW	31 ABS	2155.0	2225	52.0	-2	-1		
	2000	TYKW	31 ABS	2200.0	2220	47.0	-1	-.5		
	9400	TYKW	45 C	2247.0	2248.0	2.0	16	6		
	2000	TYKW	45 C	2247.0	2248.2	2.5	2	.5		
	3750	TYKW	45 C	2247.0	2248.2	3.0	16	7		
	2800	OTTA	1 S	2247.2	2248	2.5	5.4	2.7		
	9400	TYKW	29 PBI	2249.0		10.0	4	2		
	3750	TYKW	29 PBI	2250.0		9.0	4	1.5		
	2000	TYKW	20 GRF	2330.0	2420	180.0	2	1		
	2695	PENT	20 GRF	2335.0	2425	185.0	5.6	2.8		
	3750	TYKW	21 GRF	2340.0	2415	90.0	3	1.5		
	9400	TYKW	20 GRF	2350.0	2430	90.0	5	2.5		
	1000	TYKW	20 GRF	2350.0	2439	80.0	3	1		
16	100	GORK	44 NS	0351.0E		549.0E		10		
	200	GORK	44 NS	0351.0E		549.0E		5		
	260	ONDR	44 NS	0530.0E		518.0D	15			
	127	TORN	44 NS	0640.0E	1216	460.0D	31	14		V1
	113	POTS	44 NS	0837.0E	1342	483.0D	35			
	33	UPIC	43 NS	0843.7	1511.4	390.1				
	29	UPIC	43 NS	0847.2	1511.9	386.3				
	100	HIRA	44 NS	2334.0E	0655	650.0D	1900	190		SR
	200	HIRA	44 NS	2334.0E	0714	650.0D	190	45		MR
	3750	TYKW	20 GRF	0020.0	0024	30.0	4.5	2		
	3750	TYKW	21 GRF	0120.0	0121.7	75.0	2	1		
	9400	TYKW	20 GRF	0120.0	0130	50.0	3	1.5		
	3750	TYKW	45 C	0218.0	0219	10.0	3	1.5		
	650	GORK	25 R	0438.2		482.0E	6.5			
	650	GORK	2 S/F	0444.3	0447	5.8	3			
	1000	TYKW	45 C	0445.3	0445.8	2.0	6	1		
	950	GORK	1 S	0445.5	0446	1.8	6	3		
	100	GORK	4 S/F	0542.7	0543.4	1.6	270 D			
	200	GORK	8 S	0543.4	0543.7	.6	60 D			
	3750	TYKW	21 GRF	0605.0	0638	110.0	6	2		
	3100	CRIM	24 R	0605.0	0700.0		4			
	536	ONDR	8 S	0634.3	0634.3	.2	46			
	536	ONDR	41 F	0720.0	0942.5	190.0	15	1		
	950	GORK	1 S	0731.0	0732.1	4.3	2			
	650	GORK	2 S/F	0946.6	0948.6	2.3	6.6			
	930	BORD	46 C	0947.0	0947.6	2.0	45	3		
	950	GORK	2 S/F	0947.0	0948.8	2.1	12			
	650	GORK	1 S	1036.6	1037.4	1.0	8	4		
	200	GORK	4 S/F	1150.5	1151.1	1.2	70 D			
	536	ONDR	41 F	1154.0	1358.5	134.0	84	3		
	2800	OTTA	20 GRF	1210.0	1215	25.0	3.0	1.5		
	2950	GORK	20 GRF	1213.3	1215	13.4	3.3			
	3000	POTS	1 S	1239.0	1240.5	3.0	6.2			
	1470	POTS	1 S	1239.0	1240.5	3.5	2.7			
	2800	OTTA	1 S	1239.0	1340.5	3.0	4.4	2.0		
	2800	OTTA	240 R	1250.0	1320	30.0	4.4	2.2		
	930	BORD	8 S	1417.2	1417.2	.1	18	1		
	3000	POTS	3 S	1423.0	1423.5	1.0	16			
	9500	POTS	1 S	1423.0	1423.5	1.5	4.8			
	2800	OTTA	1 S	1423.0	1423.5	2.0	8.0	3.0		

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DAY OF MONTH	FREQUENCY	STATION	TYPE		STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	POLARIZATION OR REMARKS
16	3200	BERN	3		1423.0	1423.8	2.0	.0			ONLY PAPER REC
	5200	BERN	3		1423.0	1423.5	2.0	13.0			
	2800	OTTA	21	GRF	1440.0	1514	75.0	4.4	2.2		
	9400	HUAN		S	1507.5	1514.8	16.9	6.5	3.2		L
	930	BORD	46	C	1510.0	1510.9	6.0	119	4		
	2650	DWIN	45	C	1510.0	1511	2.0	70	50		
	10715	DWIN	1	S	1510.0	1511	2.0	10	5		
	9400	HUAN		S	1510.3	1511.1	2.1	17.0	11.6		L
	3200	BERN	4		1510.5	1510.7	3.0	.0			ONLY PAPER REC
	5200	BERN	4		1510.5	1511.0	3.0	16.0			
	2800	OTTA	4	S/F	1510.7	1511	2.0	65.0	21.7		
	2800	OTTA	20	GRF	1610.0	1635	70.0	3.4	1.7		
	2800	OTTA	1	S	1724.0	1724.7	1.0	3.0	1.5		
	2800	OTTA	1	S	1924.0	1924.2	1.2	8.8	2.2		
	2800	OTTA	3	S	2030.0	2031	3.0	15.8	7.0		
	2800	OTTA	21	GRF	2145.0	2200	75.0	7.4	4.4		
	2000	TYKW	45	C	2146.0	2201.0	70.0	10	3		
	1000	TYKW	20	GRF	2148.0	2151	60.0	3	1		
	3750	TYKW	45	C	2148.0	2215.8	60.0	7	2		
	2800	OTTA	1	S	2215.0	2216	5.0	3.6	1.6		
	2000	TYKW	5	S	2317.0	2319	20.0	1.5	.5		
	3750	TYKW	5	S	2317.0	2319.7	20.0	3	1		
17	100	GORK	44	NS	0258.0E		602.0E		120		
	200	GORK	44	NS	0259.0E		602.0E		15		
	234	POTS	44	NS	0530.0E	0559	550.0D	1000			
	33	UPIC	43	NS	0547.9	1017.1	542.4				
	29	UPIC	43	NS	0551.5	1020.7	540.4				
	260	ONDR	44	NS	0559.0E		494.0D	152	8		
	536	ONDR	44	NS	0559.0E	0940	494.0D	36	2		
	204	IIMI	44	NS	0600.0		360.0	60			
	113	POTS	44	NS	0700.0E	0722	463.0D	1000			
	127	TORN	44	NS	1002.0E		240.0D		80		V0
	100	HIRA	44	NS	1933.0E	2310	850.0D	130	60		SR
	200	HIRA	44	NS	1933.0E	0610	850.0D	190	70		SR
	1000	TYKW	45	C	0130.0	0151.5	55.0	30	2		
	1000	TYKW			0130.0	0142.3		8			
	2000	TYKW	5	S	0141.0	0142.2	4.0	4	1		
	9400	TYKW	5	S	0141.0	0142.5	3.0	3	1.5		
	3750	TYKW	5	S	0141.0	0142.3	3.0	5	2		
	650	GORK	23	GRF	0436.7		505.0E	20			
	3750	TYKW	20	PRE	0440.0	0545	65.0	10	3.5		
	9400	TYKW	20	PRE	0440.0	0545	65.0	14	6		
	1000	TYKW	20	PRE	0500.0	0541.1	42.0	10	2.5		
	2000	TYKW	20	PRE	0510.0	0546	36.0	12	4		
	950	GORK	23	GRF	0515.0	0612.4	165.0	30			
	200	GORK	27	RF	0520.5		130.0				
	2950	GORK	23	GRF	0530.0		183.0				
	3200	BERN	46		0530.0	0559.2	180.0	.0			ONLY PAPER REC
	11800	BERN	46		0530.0	0605.0	90.0U	72.0			
	8400	BERN	46		0530.0	0605.6	180.0	75.0			
	5200	BERN	46		0530.0	0605.5	180.0	65.0			
	100	GORK	25	R	0536.0		305.0		750		
	1000	TYKW	45	C	0542.0	0604.2	125.0	300	22	D	
	500	HIRA			0544.5	0638.9		150			SR
	500	HIRA	48	C	0544.5	0557.6	90.0	220	50		MR
	3750	TYKW	45	C	0545.0	0605.2	65.0	115	35	D	
	9400	TYKW	45	C	0545.0	0607 U	65.0	60 D	35	D	
	650	GORK	46	C	0545.0	0601.1	125.0	100			
	650	GORK			0545.0	0602.6		60			
	650	GORK			0545.0	0606		70			
	2000	TYKW	47	GB	0546.0	0559.4	64.0	590	35		
	100	GORK	46	C	0547.2	0559.6	22.0	7000			
	100	GORK			0547.2	0605		6200			
	100	HIRA			0548.0	0549		600			MR
	100	HIRA	48	C	0548.0	0559.3	23.0	5500	1100		WL
	204	IIMI	46	C	0548.0E	0548.8	11.2D	1100	700		
	200	HIRA	48	C	0549.0	0558.2	22.0D	1360	240		ML
	200	GORK			0549.0E	0558.2		900 D			
	200	GORK	46	C	0549.0E	0550.9	19.6D	200 D			
	29	UPIC	46	C	0553.7	0557.2	12.7				
	3100	CRIM	47	GB	0554.0	0559.5		120			
	3100	CRIM			0554.0	0605.5	44.0	206	70		
	3100	CRIM	29	PBI	0554.0	0638.0	77.0	20	7		
	5730	IRKU	45	C	0555.0	0559.7	14.0	29			0
	5730	IRKU			0555.0	0605.6		76			R
	2650	DWIN	45	C	0555.0	0559	20.0	370	150		
	2950	GORK			0555.5	0605.3		180			
	2950	GORK			0555.5	0602.3		140			
	2950	GORK	46	C	0555.5	0601.3	16.0	100			
	17000	NOBE	20	GRF	0556.3	0613.2	83.0	39			0
	33	UPIC	46	C	0556.8	0557.2	13.0				
	950	GORK			0557.5	0615.7		120			
	950	GORK	46	C	0557.5	0614.2	11.3	175			
	260	ONDR	46	C	0559.0E		12.0	210 D	70		

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DAY OF MONTH	FREQUENCY	STATION	TYPE		STARTING TIME	TIME OF MAXIMUM	DURATION	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1}		INT	POLARIZATION OR REMARKS
					UT	UT	MINUTES	PEAK	MEAN		
17	536	ONDR	48	C	0559.0E	0638.6	81.0	91	28		
	808	ONDR	46	C	0559.0E	0605.3	53.0	85	28		
	930	BORD	45	C	0600.0E	0604.6	21.0D	252	75		
	930	BORD		PBI	0621.0	0639.2	32.0	38	9		
	200	GORK	46	C	0621.0	0628.5	21.2	570			
	200	GORK			0621.0	0639.4		2700			
	9100	GORK	21	GRF	0633.0E	0633 U	350.0D	48			
	204	IZMI	46	C	0637.5	0639.0	5.0	800	500		
	3750	TYKW	30	PBI	0650.0		110.0	24	12		
	9400	TYKW	30	PBI	0650.0		90.0	21	8		
	2000	TYKW	30	PBI	0650.0		130.0	16	8		
	200	GORK	8	S	0655.7	0656.2	.8	2960			
	3100	CRIM	1	S	0658.0	0700.5	4.0	8	3		
	5730	IRKU	20	GRF	0659.0	0700.4	4.0	18			0
	3750	TYKW	5	S	0659.5	0700.4	2.5	7	2.5		
	2000	TYKW	5	S	0700.0	0700.6	2.0	4.5	1.5		
	9400	TYKW	5	S	0700.0	0700.3	1.5	8	2.5		
	9500	POTS	1	S	0700.0	0700.5	1.0	6.5			
	1470	POTS	1	S	0700.0	0700.5	1.0	2.4			
	3000	POTS	1	S	0700.0	0700.5	1.0	5.0			
	9500	POTS	1	S	0730.0	0730.7	3.0	8.1			
	1000	TYKW	29	PBI	0747.0		65.0	7	3		
	7000	SAOP	40	F	1133.0						
	1470	POTS	20	GRF	1330.5	1333.0	7.5	7.2			
	2800	OTTA	240	R	1331.0	1334	3.0	3.8	2.0		
	2800	OTTA	24	R	1435.0	1540	65.0	7.0	4.0		
	2800	OTTA	27	RF	1435.0		275.0	7.0	5.3		
	9400	HUAN		S	1516.3	1516.7	1.4	12.7	5.6		0
	9400	HUAN		S	1526.5	1530.3	10.2	8	2.9		0
	2800	OTTA	24P	R	1540.0		145.0	7.0			
	9400	HUAN		S	1751.6	1802	21.2	9.6	2.5		L
	2800	OTTA	26	FAL	1805.0	1910	65.0	-7.0	-3.5		
	2800	OTTA	21	GRF	2040.0	2215	140.0	4.2	3.0		
	2800	OTTA	1	S	2154.7	2155.2	2.0	2.8	1.4		
	9400	TYKW	5	S	2156.5	2156.7	1.0	9	3		
	9400	TYKW	5	S	2315.0	2316.7	9.0	12	2		
18	100	GORK	44	NS	0258.0		602.0		20		
	200	GORK	44	NS	0258.0E		602.0		65		
	234	POTS	44	NS	0540.0E	1002	603.0D	110			
	127	TORN	44	NS	0540.0E		600.0D		37		V1
	260	ONDR	44	NS	0541.0E		511.0D	158	18		
	204	IZMI	44	NS	0600.0		360.0	70			
	100	HIRA	44	NS	1933.0E	0516.7	850.0D	500	110		SR
	200	HIRA	44	NS	1933.0E	0523	850.0D	800	175		SR
	2000	TYKW	20	GRF	0000.0	0024	60.0	3	1.5		
	3750	TYKW	20	GRF	0005.0	0021.1	50.0	5	2		
	1000	TYKW	20	GRF	0005.0	0032	55.0	2	.5		
	9400	TYKW	5	S	0021.0	0021.3	15.0	6	2.5		
	9400	TYKW	5	S	0039.3	0039.6	1.0	6	1.5		
	3750	TYKW	5	S	0126.0	0127.5	3.0	6	2.5		
	3750	TYKW	29	PBI	0129.0		15.0	2	1		
	3750	TYKW	21	GRF	0155.0	0220	120.0	4	2		
	2000	TYKW	21	GRF	0155.0	0220	120.0	2	1		
	3750	TYKW	5	S	0203.5	0204.2	2.5	3	1		
	1000	TYKW	21	GRF	0205.0	0220	95.0	1	.5		
	650	GORK	22	GRF	0301.5E	0330.1	136.5	11	4		
	200	GORK	4	SF	0325.2	0329.4	4.6	300			
	1000	TYKW	5	S	0329.0	0330	4.0	2	1		
	2000	TYKW	5	S	0337.0	0338	4.0	1.5	.7		
	3750	TYKW	5	S	0337.0	0338	4.0	2	1		
	3750	TYKW	5	S	0348.0	0348.3	1.0	3	.5		
	9400	TYKW	5	S	0348.0	0348.3	2.0	4	1		
	1000	TYKW	5	S	0354.0	0354.3	.7	24	6		
	2000	TYKW	21	GRF	0420.0	0500	78.0	1.5	.7		
	3750	TYKW	45	C	0433.0	0434.0	5.0	12	1.5		
	2000	TYKW	5	S	0433.0	0434.0	3.0	5	1		
	2950	GORK	4	SF	0433.7	0434.3	.9	72			
	500	HIRA	46	C	0454.3	0454.6	1.0	200	70		0
	1000	TYKW	5	S	0455.0	0455.3	.7	4	1.5		
	3750	TYKW	5	S	0455.1	0455.3	.5	8	2		
	200	GORK	8	S	0455.2	0455.5	.8	830			
	2000	TYKW	21	GRF	0615.0	0635	105.0	2	1		
	3750	TYKW	21	GRF	0615.0U	0635	90.0U	3	1.5		RAIN
	29	UPIC	42	SER	0647.5	0723.6	48.4				
	33	UPIC	42	SER	0653.0		41.8				
	9500	POTS	3	S	0653.3	0655.6	7.2	23			
	3100	CRIM	1	S	0654.5	0655.0	2.0	6	2		
	9400	TYKW	5	S	0655.0	0655.5	3.0	19	4		
	3000	POTS	3	S	0655.1	0655.5	0.9	8.6			
	1470	POTS	1	S	0655.2	0655.7	0.8	4.3			
	3750	TYKW	5	S	0655.3	0655.6	3.0	11	2		
	2000	TYKW	5	S	0655.3	0655.6	.7	2.5	.8		
	2950	GORK	1	S	0655.6	0655.9	1.0	5.3	2.5		
	11800	BERN	3		0656.3	0656.6	5.0	15.0			ONLY PAPER REC

SOLAR RADIO EMISSION
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DAY OF MONTH	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	POLARIZATION OR REMARKS
18	5200	BERN	3	0656.3	0656.6	4.0	13.0			ONLY PAPER REC
	8400	BERN	3	0656.5	0656.6	5.0	15.0			ONLY PAPER REC
	650	GORK	20 GRF	0700.6	0704.2	13.4	4.5			
	3100	CRIM	1 S	0712.0	0717.0	12.0	10	3		
	2950	GORK	21 GRF	0714.1	0716	15.2	3.2	1.5		
	2800	TYKW	45 C	0715.0	0717.4	5.0	5	1.5		
	3750	TYKW	45 C	0715.0	0717.1	4.0	9	3.5		
	2950	GORK	1 S	0716.1	0717.4	2.4	4.2	2		
	3750	TYKW	29 PBI	0719.0		21.0	3	1.5		
	536	ONDR	41 F	0720.0	0820.2	90.0	29	4		
	650	GORK	22 GRF	0721.6	0821.1	67.4	10			
	9100	GORK	1 S	0755.2	0755.8	2.8	23	8		
	100	GORK	4 SF	0814.4	0815.1	1.4	420			
	234	POTS	41 F	0816.9	0817	0.7	335	10		
	3100	CRIM	20 GRF	0840.0	0955.0	224.0	15	5		
	650	GORK	22 GRF	0904.7	0954	67.0	10			
	536	ONDR	41 F	0907.0	0947.4	112.0	31	8		
	33	UPIC	42 SER	0940.7	0954.2	72.2				
	29	UPIC	42 SER	0941.0	0954.2	77.7				
	650	GORK	20 GRF	1036.7	1045.9	57.0	5			
	234	POTS	4 S/F	1126.5	1126.9	1.1	450	7		
	127	TORN	45 C	1315.0	1315.9	1.8	200	100		
	2800	OTTA	21 GRF	1418.0	1420	50.0D	3.8			
	7000	SAOP	40 F	1425.0						
	2800	OTTA	1 S	1448.0	1449	1.0	7.8	3.9		
	2800	OTTA	22 GRF	1530.0	1725	240.0	7.0	4.6		
	9400	HUAN	S	1549.3	1615.7	56.0	5.6	2.3		R
	9400	HUAN	S	1952.1	2003.8	31.3	7	3.3		L
	2800	OTTA	1 S	2027.0	2028.3	3.0	2.2	1.0		
	2800	OTTA	240 R	2033.0	2235	122.0	13.2	6.6		
	1000	TYKW	21 GRF	2150.0	2348	480.0	9	4.5		
	2000	TYKW	21 GRF	2150.0	2550	560.0	11	6.5		
	2000	TYKW	45 C	2155.0	2157.3	7.0	5	1.5		
	9400	TYKW	21 GRF	2155.0	2348	360.0	10	9		
	3750	TYKW	21 GRF	2155.0	2350	500.0	14	8		
	200	HIRA	46 C	2302.3	2302.8	1.0	2150	610		ML
	100	HIRA	46 C	2302.7	2303	1.0	2700	480		MR
19	100	GORK	44 NS	0255.0E		346.0E		50		
	200	GORK	44 NS	0258.0E		353.0E		200		
	127	TORN	44 NS	0300.0E	0755.6	780.0D	730	14		VI
	29	UPIC	43 NS	0502.8	1139.6	518.7				
	33	UPIC	43 NS	0503.8		518.8				
	234	POTS	44 NS	0540.0E	0612.5	565.0D	240			
	113	POTS	44 NS	0547.0E	0607	193.0D	200			
	204	IIMI	44 NS	0600.0		360.0	80			
	536	ONDR	44 NS	0648.0E		464.0D	39			
	260	ONDR	44 NS	0648.0E		464.0D	131	17		
	200	HIRA	44 NS	1933.0E	2012	850.0D	320	50		SR
	100	HIRA	44 NS	1933.0E	2014	850.0D	150	20		SR
	3750	TYKW	5 S	0007.0	0007.7	3.0	15	6		
	9400	TYKW	5 S	0007.4	0007.7	.7	10	2		
	2695	PENT	1 S	0007.5	0008	1.2	4.2	2.1		
	3750	TYKW	29 PBI	0010.0		20.0	3	1		
	650	GORK	22 GRF	0300.0E		260.0	45			
	1000	TYKW	45 C	0405.0	0428.6	40.0	9	2.5		
	3750	TYKW	5 S	0504.0	0504.2	1.0	3	1		
	100	GORK	4 S/F	0511.0	0518.5	10.5	3100			
	234	POTS	4 S/F	0621.4	0621.5	0.3	720	100		III
	234	POTS	4 S/F	0715.6	0717.8	3.2	430	20		
	234	POTS	4 S/F	0749.2	0749.5	1.2	240	25		III
	1470	POTS	1 S	0754.6	0755.5	2.0	4.8			
	3000	POTS	1 S	0754.8	0755.6	1.4	5.0			
	100	GORK	4 S/F	0814.4	0815.1	1.4	420			
	100	GORK	8 S	0843.0	0843.1	.4	4000			
	100	GORK		0906.3	0916.7		250			
	100	GORK		0906.3	0908.0		270 D			
	100	GORK	41 F	0906.3	0906.4	10.7	270 D			
	234	POTS	42 SER	0925.8	0925.8	5.2	575	4		
	3000	POTS	1 S	1024.4	1025.5	1.6	5.0			
	9500	POTS	1 S	1024.7	1025.5	1.8	5.1			
	930	BORD	46 C	1025.0	1025.2	1.0	22	4		
	1470	POTS	1 S	1025.0	1025.5	1.9	4.8			
	234	POTS	4 S/F	1138.4	1139.1	1.7	300	30		III
	3000	POTS	1 S	1320.5	1321.9	2.0	6.9			
	9500	POTS	1 S	1320.8	1321.5	3.6	5.1			
	930	BORD	46 C	1321.0	1321.4	1.4	47	4		
	7000	SAOP	45 C	1321.0	1321.4		11			42L 2PARTS
	2800	OTTA	1 S	1321.0	1321.9	1.0	8.6	4.0		
	1470	POTS	3 S	1321.3	1321.8	1.5	6.5			
	2800	OTTA	20 GRF	1410.0	1420	30.0	2.4	1.2		
	9400	HUAN	S	1440.3	1441.6	2.9	9.3	7		L
	7000	SAOP	20 GRF	1441.0			11			R
	930	BORD	40 F	1500.0	1516.2	23.0	45	15		
	7000	SAOP	40 F	1556.0						

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DAY OF MONTH	FREQUENCY	STATION	TYPE	STARTING TIME	TIME OF MAXIMUM	DURATION	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1}		INT	POLARIZATION OR REMARKS
				UT	UT	MINUTES	PEAK	MEAN		
19	2800	OTTA	23 GRF	1640.0	1930	320.0	10.8	5.8		
	2800	OTTA	8 S	1653.8	1653.8	.1	37.6			
	930	BORD	40 F	1655.3	1655.8	1.0	30	2		
	2800	OTTA	4 S/F	1710.3	1711	2.0	17.6	4.0		
	9400	HUAN	S	2013.8	2022.2	15.6	7.8	3.8		L
	9400	HUAN	S	2040.3	2041.4	2.4	10.9	4.4		L
	3750	TYKW	5 S	2318 0	2320.5	3.0	7	2.5		
	1000	TYKW	45 C	2319.0	2320.5	2.0	31	2		
	2000	TYKW	45 C	2319.0	2320.5	3.0	5	.5		
	3750	TYKW	29 PBI	2321.0		35.0	3	1.5		
20	100	GORK	44 NS	0257.0E		345.0		5		
	200	GORK	44 NS	0257.0E		414.0D		25		
	127	TORN	44 NS	0600.0E		540.0D		4		V1
	204	IZMI	44 NS	0600.0		360.0	55			
	260	ONDR	44 NS	0620.0E		480.0D	202	10		
	29	UPIC	43 NS	0703.0	1150	374.2				
	33	UPIC	43 NS	0703.4	1149.9U	374.5				
	200	HIRA	44 NS	1933.0E	0148	850.0D	220	35		MR
	100	HIRA	44 NS	1933.0E	2133.7	720.0D	260	25		
	3750	TYKW	45 C	0029.5	0030.7	2.5	5	2		
	1000	TYKW	45 C	0030.0	0031.4	2.0	21	3		
	2000	TYKW	5 S	0030.0	0030.7	2.0	4	2		
	2695	PENT	8 S	0030.2	0030.2	.1	8.8			
	2000	TYKW	29 PBI	0032.0		70.0	1.5	1		
	3750	TYKW	29 PBI	0032.0		70.0	2	1		
	2000	TYKW	20 GRF	0330.0	0341	50.0	3.5	1.5		
	100	GORK	41 F	0333.3	0334 U	6.5	200 D			
	100	GORK		0333.3	0338 U		200 D			
	3750	TYKW	20 GRF	0335.0	0343	45.0	4	1.5		
	100	GORK	42 SER	0425.5	0425.6	19.4	220 D			
	100	GORK		0425.5	0428.1		220 D			
	100	GORK		0425.5	0444.4		220 D			
	100	GORK	41 F	0453.5	0453 U	3.3	220 D			
	100	GORK		0453.5	0455 U		220 D			
	1000	TYKW	21 GRF	0603.0E	0614	60.0D	5	2 D		
	3750	TYKW	20 GRF	0604.0	0611	70.0	7	3		
	2000	TYKW	20 GRF	0604.0	0611	70.0	7	3.5		
	3100	CRIM	1 S	0604.0	0604.5	1.0	5	2		
	3100	CRIM	21 GRF	0604.0	0610.5	56.0	7	2		
	2950	GORK	20 GRF	0604.3	0611	65.0	7.2	3		
	9100	GORK	20 GRF	0606.6	0633	53.0	10			
	9400	TYKW	20 GRF	0607.0	0611	55.0	9	4		
	1000	TYKW	45 C	0607.0	0610.8	6.0	6	2		
	200	GORK	46 C	0613.2	0613.7	8.4	230 D			
	200	GORK		0613.2	0620.5		230			
	100	GORK		0625.5	0636.4		150			
	100	GORK		0625.5	0653.7		240 D			
	100	GORK		0625.5	0640.6		240 D			
	100	GORK	41 F	0625.5	0627.3	29.4	160			
	3000	POTS	1 S	0754.2	0755.2	1.3	5.2			
	1470	POTS	1 S	0755.8	0756.4	1.7	3.8			
	650	GORK	1 S	0756.0	0756.2	.9	5.5	3		
	3100	CRIM	3 S	0805.0	0806.5	3.0	24	7		
	3000	POTS	4 S/F	0816.5	0818.1	3.5	28			
	6100	KISV	4 S/F	0816.5	0819	3.0	26			
	9500	POTS	4 S/F	0816.6	0818.2	3.8	21			
	2950	GORK	4 S/F	0816.6	0818.2	2.8	32	10		
	2950	GORK	29 PBI	0816.6	0819.4	17.8	3.2	1.5		
	9100	GORK	29 PBI	0816.9	0818.6	58.0	15			
	9100	GORK	1 S	0816.9	0818.4	1.6	27			
	2650	DWIN	1 S	0817.0	0818	2.0	50	20		
	10715	DWIN	1 S	0817.0	0818	2.0	10	5		
	3200	BERN	4	0817.0	0817.7	3.0	.0			ONLY PAPER REC
	9400	TYKW	45 C	0817.0	0818.2	4.0	28	5		
	2800	TYKW	45 C	0817.0	0817.8	3.0	16	4		
	5200	BERN	4	0817.0	0818.1	3.0	20.0			
	3750	TYKW	45 C	0817.0	0818.2	4.0	40	5		
	11800	BERN	3	0817.0	0818.0	2.0	20.0			
	1470	POTS	4 S/F	0817.3	0818.4	2.2	21			
	15000	KISV	1 S	0817.5	0818	2.0	10			
	950	GORK	1 S	0817.6	0818.5	1.7	4.5			
	650	GORK	2 S/F	0818.0	0818.4	1.7	2	1		
	1000	TYKW	45 C	0818.0	0818.5	1.0	12	3		
	2950	GORK	20 GRF	0844.3	0844.7	8.5	4.3	2		
	650	GORK	4 S/F	0844.4	0844.7	1.3	8	4		
	127	TORN	8 S	1059.0	1059.4	0.6	130	65		
	127	TORN	45 C	1149.4	1149.8	1.9	170	64		
	204	IZMI	7 C	1149.5	1150.0	1.5	270	190		
	3200	BERN	3	1217.5	1220.0	6.0	.0			ONLY PAPER REC
	127	TORN		1217.7	1220.3		390			
	127	TORN	45 C	1217.7	1218.5	4.0	140	85		
	930	BORD	46 C	1219.0	1219.2	3.0	98	3		
	2800	OTTA	2 S/F	1219.0	1219.8	3.0	7.6	3.0		
	930	BORD	8 S	1224.2	1224.2	.1	14	1		

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DAY OF MONTH	FREQUENCY	STATION	TYPE		STARTING TIME	TIME OF MAXIMUM	DURATION	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1}		INT	POLARIZATION OR REMARKS
					UT	UT	MINUTES	PEAK	MEAN		
20	9400	HUAN		S	1242.0	1243.3	6.1	12.6	5.6		0
	9400	HUAN		S	1346.1	1354.2	22.5	4.7	2.1		L
	2800	OTTA	2	S/F	1423.0	1425.1	3.2	7.4	2.6		
	9400	HUAN		S	1424.6	1425.5	3.5	6.3	2.6		0
	9400	HUAN		S	1654.5	1656.6	8 3	7.9	4.1		0
	7000	SAOP	20	GRF	1719.0			14			0
	2800	OTTA	1	S	1734.0	1735	2.0	3.6	1.8		
	9400	HUAN		S	1810.6	1832	34.1	6.3	3		0
	2800	OTTA	21	GRF	1920.0	1935	120.0	10.8	5.4		
	2800	OTTA	3	S	1924.0	1925	5.0	69.0	12.0		
	9400	HUAN		S	1924.3	1925.2	1.8	78.6	35.6		0
	7000	SAOP	45	C	1924.4	1925.2	1.6	160			4R
	9400	HUAN	29	PRI	1926.1	1926.1	35.2	15.7	7.7		0
	2800	OTTA	8	S	1931.3	1931.5	.5	5.0	2.0		
	2000	TYKW	5	S	2237.0	2237.6	1.5	6	1		
	9400	TYKW	5	S	2237.3	2237.6	3.0	9	2		
	2800	OTTA	8	S	2237.4	2237.5	.5	5.6	2.8		
	9400	TYKW	45	C	2253.0	2256.0	8.0	31	10		
	1000	TYKW	45	C	2254.0	2257.2	7.0	117	4.5		
	2000	TYKW	45	C	2254.0	2257.2	7.0	37	3		
	2800	OTTA	40	F	2254.0	2257	6.0	7.4			
	9400	TYKW	30	PBI	2301.0		30.0	7	3		
	9400	TYKW	5	S	2316.0	2316.0	3.0	7	2		
21	100	GORK	44	NS	0355.0E		206.0D		5		
	200	GORK	44	NS	0356.0E		544.0D		30		
	33	UPIC	43	NS	0540.7		525.1				
	260	ONDR	44	NS	0541.0E		509.0D	145	8		
	127	TORN	44	NS	0700.0E		480.0D		1		V0
	200	HIRA	44	NS	1934.0E	0317	650.0D	340	50		MR
	100	HIRA	43	NS	2256.0	0324	430.0	1000 U			SR
	1000	TYKW	45	C	0018.1	0018.6	.7	6	1.5		
	1000	TYKW	5	S	0021.7	0021.9	.5	8	2		
	9400	TYKW	5	S	0026.0	0027	3.0	3	1.5		
	3750	TYKW	5	S	0031.0	0033.0	5.0	4.5	1.5		
	2000	TYKW	5	S	0031.0	0032	5.0	1.5	.7		
	1000	TYKW	5	S	0031.0	0033	5.0	1	.5		
	2695	PENT	1	S	0032.0	0032.2	2.0	2.2			
	9400	TYKW	5	S	0134.0	0136.4	10.0	6	1.5		
	9400	TYKW	5	S	0202.0	0203	10.0	3	1.5		
	3750	TYKW	21	GRF	0210.0	0330	300.0	15	6		
	2000	TYKW	21	GRF	0220.0	0320	300.0	11	5		
	9400	TYKW	28	PRE	0225.0	0230.6	28.0	11	3		
	1000	TYKW	21	GRF	0230.0	0440	280.0	4	2		
	2000	TYKW	5	S	0239.0	0242	7.0	1.5	.8		
	1000	TYKW	5	S	0239.0	0244	9.0	2	1		
	3750	TYKW	45	C	0253.0	0256.3	5.0	161	40		
	5730	IRKU	45	C	0253.0U	0254.9	8.0	34			R
	5730	IRKU			0253.0U	0255.4		69			R
	5730	IRKU			0253.0U	0256.3		460			R
	17000	NOBE	29	PBI	0253.4	0258.1	14.2	21			0
	17000	NOBE	46	C	0253.4	0256.3	4.6	1046			L
	500	HIRA	45	C	0253.6	0256	5.0	70	20		0
	1000	TYKW	45	C	0254.0	0256.3	6.0	80	12		
	9400	TYKW	47	GB	0254.4E	0256.3	3.6D	950	240 D		
	35000	NAGO	5	S	0255.0	0256	3.0	126			
	2000	TYKW	45	C	0255.8E	0256.2	2.2D	465	95 D		
	2000	TYKW	29	PBI	0258.0		12.0	9	2		
	9400	TYKW	29	PBI	0258.0		200.0	17	7		
	3750	TYKW	29	PBI	0258.0		12.0	6	3 D		
	35000	NAGO	29	PBI	0258.0	0300	16.0	12			
	500	HIRA	8	S	0300.0	0300.1	.8	70	30		0
	17000	NOBE	24	R	0312.5	0519.5	290.0	20			0
	100	GORK			0535.0	0540.9		420 D			
	100	GORK			0535.0	0546.9		420 D			
	100	GORK			0535.0	0547.4		420			
	100	GORK	41	F	0535.0	0536.4	14.2	420 D			
	2950	GORK	1	S	0540.0	0541.0	3.6	3.3	1.5		
	3750	TYKW	5	S	0540.5	0540.9	1.5	4.5	1.5		
	100	GORK	4	S/F	0626.2	0628.9	6.4	280			
	204	IZMI	8	S	0656.4	0656.4	0.5	260	175		
	100	GORK	4	S/F	0838.6	0840.3	4.8	240			
	9100	GORK	22	GRF	0848.0	0849.8	12.8	15			
	6100	KISV	4	S/F	0849.0	0849.8	5.0	9			
	9500	POTS	42	SER	0904.4	0909.1	5.0	63			
	3000	POTS	1	S	0905.0	0905.3	0.6	6.2			
	930	BORD	8	S	0923.7	0923.7	.1	41	1		
	100	GORK	41	F	0927.0	0928	16.0	190			
	100	GORK			0927.0	0936		500			
	100	GORK			0927.0	0941.3		500			
	100	GORK			0927.0	0932.6		500 D			
	100	GORK	8	S	1007.0	1007.2	.5	460 D			
	100	GORK			1026.2	1035.6		180			
	100	GORK			1026.2	1031.3		440			
	100	GORK	41	F	1026.2	1028.1	10.0	460 D			

SOLAR RADIO EMISSION
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JULY 1980

DAY OF MONTH	FREQUENCY	STATION	TYPE		STARTING TIME	TIME OF MAXIMUM	DURATION	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1}		INT	POLARIZATION OR REMARKS
					UT	UT	MINUTES	PEAK	MEAN		
21	200	GORK	4	S/P	1027.0	1028.8	1.4	270			
	234	POTS	4	S/P	1044.1	1044.2	0.5	625	10		
	9100	GORK	1	S	1044.2	1044.4	1.1	15	5		
	100	GORK	41	F	1210.5	1210.8	16.0	450 D			
	100	GORK			1210.5	1221.9		450 D			
	100	GORK			1210.5	1212		450 D			
	6100	KISV	4	S/F	1248.7	1249.2	1.0	18			
	1470	POTS	1	S	1248.7	1249.3	1.3	1.6			
	113	POTS	4	S/F	1248.8	1249.2	0.8	3500	700		III
	9500	POTS	1	S	1248.8	1249.3	1.2	10			
	7000	SAOP	3	S	1248.8	1249.2	.8	22			21L
	9400	HUAN		S	1400.8	1414.3	28.2	10.9	2.1		L
	930	BORD	8	S	1412.0	1412.4	.1	28	1		
	2800	OTTA	1	S	1413.0	1415	8.0	2.4	1.4		
	113	POTS	41	F	1421.9	1423.6	3.7	300	7		III
	2800	OTTA	2	S/F	1422.0	1423.4	5.0	6.2	2.8		
	2800	OTTA	20	GRF	1610.0	1625	35.0	2.8	1.4		
	2800	OTTA	26	FAL	1650.0	1740	50.0	-4.4	-2.2		
	2800	OTTA	21	GRF	1835.0	1930	135.0	15.2	8.0		
	9400	HUAN		S	1915.3	1934.3	54.3	9.3	6		L
	2800	OTTA	4	S/F	1919.5	1921	8.0	28.0	10.0		
	9400	HUAN		S	1919.6	1921	4.2	38.8	24.4		L
	9400	HUAN		S	1951.0	1952.6	2.5	12.4	6.2		L
	3750	TYKW	20	GRF	2120.0	2200	120.0	3	1.5		
	2800	OTTA	20	GRF	2135.0	2200	85.0	4.4	3.0		
	2000	TYKW	20	GRF	2135.0	2200	105.0	4	2		
	9400	TYKW	21	GRF	2140.0	2205 U	80.0	3	1.5		
	1000	TYKW	20	GRF	2140.0	2200	100.0	3	1.5		
	9400	TYKW	5	S	2213.0	2215	7.0	4	2		
22	100	GORK	44	NS	0301.0E		174.0		150		
	200	GORK	44	NS	0301.0E		600.0D		30		
	33	UPIC	43	NS	0515.3	1038.7	542.6				
	260	ONDR	44	NS	0540.0E		513.0D	33	2		
	29	UPIC	43	NS	0540.0	0853.5	518.0				
	127	TORN	44	NS	0700.0E	1043.2	480.0D	240	12		V1
	100	GORK	43	NS	0910.0		230.0		20		
	113	POTS	43	NS	0920.0	1031	330.0D	20			
	100	HIRA	44	NS	1933.0E	2326.2	280.0D	55	15		
	5730	IRKU			0109.0	0118.2		82			R
	5730	IRKU			0109.0	0118.5		80			R
	5730	IRKU	21	GRF	0109.0	0117.6	15.0	77			R
	9400	TYKW	45	C	0112.0	0118.5	10.0	65	12		
	3750	TYKW	45	C	0113.0	0118.2	9.0	48	10		
	2000	TYKW	45	C	0113.0	0118	7.0	8	3		
	500	HIRA	6	S	0114.0	0114.3	.6	45	20		MR
	2695	PENT	4	S/F	0116.0	0118.5	5.0	20.0	8.6		
	1000	TYKW	5	S	0117.5	0118	2.5	1	.3		
	2000	TYKW	29	PBI	0120.0		40.0	2.5	1		
	9400	TYKW	29	PBI	0122.0		40.0	3	1.5		
	3750	TYKW	29	PBI	0122.0		40.0	5	2		
	3750	TYKW	29	PBI	0206.0		35.0	7	4		
	2000	TYKW	45	C	0300.0	0302.6	20.0	8	1.5		
	9400	TYKW	20	GRF	0300.0	0310	40.0	4	2		
	3750	TYKW	20	GRF	0303.0E	0310	37.0D	3	1 D		
	1000	TYKW	5	S	0304.5	0305.5	3.5	1	.5		
	2000	TYKW	21	GRF	0340.0	0345	60.0	1.5	.7		
	3750	TYKW	28	PRE	0350.0	0402.5	12.5	3	1.5		
	9400	TYKW	5	S	0402.0	0403.5	3.0	17	5		
	3750	TYKW	5	S	0402.5	0403.6	3.5	31	13		
	9100	GORK	1	S	0402.8	0403.5	1.2	15	6		
	9100	GORK	29	PBI	0402.8	0404.2	8.8	9			
	5730	IRKU	20	GRF	0402.8	0403.6	5.0	35			L
	9400	TYKW	29	PBI	0405.0		30.0	5	3		
	2000	TYKW	5	S	0411.0	0411.5	2.0	4	1		
	1000	TYKW	5	S	0411.0	0411.4	2.0	1.5	.5		
	3750	TYKW	20	GRF	0450.0	0530	190.0	5	2		
	9400	TYKW	20	GRF	0500.0	0530	120.0	4	2		
	2000	TYKW	21	GRF	0510.0	0550	110.0	2	1		
	2000	TYKW	8	S	0622.6	0622.7	.3	10	3		
	200	GORK	41	F	0715.0	0716.7	13.5	85			
	200	GORK			0715.0	0722.5		60			
	100	GORK			0729.2	0734.3		500			
	100	GORK			0729.2	0731.4		330			
	100	GORK	41	F	0729.2	0729.6	6.0	135			
	100	GORK			0729.2	0732.6		340			
	100	GORK			0843.6	0851.8		340			
	100	GORK			0843.6	0855.7		540			
	100	GORK			0843.6	0907.2		340			
	100	GORK	41	F	0843.6	0846.6	24.5	240			
	200	GORK	27	RF	0906.0	0948	197.0	60			
	930	BORD	41	F	0919.7	0919.8	.3	14	2		
	930	BORD	8	S	0929.6	0929.7	.2	43	1		
	650	GORK	4	S/F	0944.8	0946.1	2.7	9.5	4		
	930	BORD	41	F	1057.0	1057	.3	27	1		

SOLAR RADIO EMISSION
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JULY 1980

DAY OF MONTH	FREQUENCY	STATION	TYPE		STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	POLARIZATION OR REMARKS
22	6100	KISV	4	S/F	1311.0	1313	3.0	5			
	9500	PONS	1	S	1312.2	1313.0	1.6	6.4			
	3200	BERN	3		1335.5	1338.5	8.0	.0			ONLY PAPER REC
	15000	KISV	4	S/F	1336.0	1338.7	4.0	88			
	1470	PONS	1	S	1337.0	1338.5	3.0	4.1			
	2650	DWIN	1	S	1337.0	1338	3.0	20	10		
	9500	PONS	3	S	1337.0	1338.5	5.5	67			
	3000	PONS	3	S	1337.0	1338.5	5.5	38			
	6100	KISV	4	S/F	1337.0	1339	6.0	107			
	10715	DWIN	1	S	1337.0	1338	3.0	20	10		
	5200	BERN	3		1337.0	1338.4	3.0	45.0			
	9400	HUAN		S	1337.1	1338.4	3.0	80.9	28.9		L
	11800	BERN	3		1338.0	1338.3	3.0	75.0			
	2800	OTTA	3	S	1338.0	1338.0	5.0	28.6	8.0		
	19600	BERN	3		1338.0	1338.0U	1.0U	40.0U			
	8400	BERN	3		1338.0	1338.3	3.0	55.0			
	2800	OTTA	260	FAL	1710.0	1735	25.0	4.2	2.1		
	930	BORD	46	C	1745.0	1800.6	56.0D	227 D			
	9400	HUAN		S	1822.3	1844.8	66.9	7.8	6		0
	2800	OTTA	20	GRF	2240.0	2255	50.0D	7.2			
	2000	TYKW	20	GRF	2240.0	2300	50.0	3	1.5		
	3750	TYKW	20	GRF	2240.0	2255	80.0	9	5		
	9400	TYKW	20	GRF	2245.0	2255	75.0	16	9		
23	100	GORK	44	NS	0300.0E		600.0E		150		
	200	GORK	44	NS	0300.0E		460.0D		45		
	29	UPIC	44	NS	0345.0E	0603	470.9D				
	33	UPIC	44	NS	0345.0E		470.9D				
	113	PONS	44	NS	0530.0E	0745	571.0D	200			
	234	PONS	44	NS	0539.0E	0605	246.0D	75			
	260	ONDR	44	NS	0546.0E		511.0D	57	4		
	204	IIMI	44	NS	0600.0		180.0	50			
	127	TORN	44	NS	1315.0E		105.0D		12		V1
	1000	TYKW	20	PRE	0044.0	0046.0	6.0	6	1		
	3750	TYKW	47	GB	0050.0	0057.1	55.0	890	100		
	1000	TYKW	47	GB	0050.0	0057.1	55.0	1070	85		
	2000	TYKW	45	C	0050.0	0056.4	55.0	490	85		
	9400	TYKW	47	GB	0052.0	0056.9	28.0	920	160		
	5730	IRKU			0052.0	0056.0		812			L
	5730	IRKU			0052.0	0057.0		1137			L
	5730	IRKU			0052.0	0059.0		616			L
	5730	IRKU	45	C	0052.0	0055.5	15.0	116			R
	500	HIRA	48	C	0053.7	0133.6	130.0	600	250		SR
	500	HIRA	29	PBI	0053.7	0351	360.0	40	15		SR
	200	HIRA			0054.3	0105.3		425			WL
	200	HIRA	48	C	0054.3	0125.5	466.0U	1000	217 U		SR
	17000	NOBE	45	C	0054.8	0056.9	14.6	454			0
	17000	NOBE	29	PBI	0054.8	0109.6	146.0	73			0
	35000	NAGO	5	S	0055.0	0057	4.0	179			
	100	HIRA			0056.3	0057.7		2400			
	100	HIRA	48	C	0056.3	0138.2	466.0U	4500	730 U		SR
	100	HIRA			0056.3	0106.4		2800			WL
	35000	NAGO	29	PBI	0059.0	0059	78.0	128			
	5730	IRKU			0107.0	0137.0		38			L
	5730	IRKU	30	PBI	0107.0		83.0	112			L
	9400	TYKW	29	PBI	0120.0		150.0	76	20		
	1000	TYKW	30	PBI	0145.0		105.0	10	3		
	3750	TYKW	29	PBI	0145.0		120.0	34	10		
	2000	TYKW	29	PBI	0145.0		120.0	18	6		
	1000	TYKW	42	SER	0208.0	0209.4	9.0	7	1.5		
	1000	TYKW	45	C	0310.0	0312.1	5.0	13	4		
	1000	TYKW	42	SER	0321.0	0322.3	5.0	6	1.5		
	9400	TYKW	20	GRF	0610.0	0630 U	100.0	6 U	3		
	2000	TYKW	20	GRF	0610.0	0630	100.0	4	2		
	3750	TYKW	20	GRF	0610.0	0630	100.0	5	2.5		
	930	BORD	3	S	0658.0	0701.3	7.0	41	19		
	930	BORD	3	S	0716.0	0719.5	11.0	36	17		
	1470	PONS	3	S	0815.5	0818.8	4.5	7.4			
	9500	PONS	1	S	0816.0	0819.1	4.0	4.8			
	6100	KISV	8	S	0915.0	0916.5	3.0	8			
	9100	GORK	1	S	0916.2	0916.8	2.0	15	5		
	6100	KISV	8	S	1010.0	1011	2.0	5			
	1470	PONS	1	S	1010.0	1011.2	2.5	2.5			
	9500	PONS	1	S	1010.0	1010.9	1.8	7.9			
	3000	PONS	3	S	1010.5	1010.8	1.3	8.0			
	15000	KISV	8	S	1010.5	1010.7	1.0	11			
	930	BORD	3	S	1124.7	1126	4.3	24	11		
	9400	HUAN		S	1411.2	1427.7	80.1	10.3	6		R
	9400	HUAN		S	1423.2	1424.1	2.3	55	21.7		R
	9500	PONS	3	S	1423.5	1424.3	2.5	47			
	9400	HUAN		S	1604.5	1701.1	74.7	12	4.1		0
	3750	TYKW	20	GRF	2210.0	2212	40.0	3	1.5		
24	200	HIRA	43	NS	0156.0	0224	130.0	20	5		WR
	260	ONDR	44	NS	0541.0E		512.0D	13			

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

JULY 1980

DAY OF MONTH	FREQUENCY	STATION	TYPE		STARTING TIME	TIME OF MAXIMUM	DURATION	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1}		INT	POLARIZATION OR REMARKS
					UT	UT	MINUTES	PEAK	MEAN		
24	2800	TYKW	5	S	0231.0	0232.6	4.0	1	.3		
	9400	TYKW	5	S	0303.0	0303.5	1.0D	17	6 D		
	3750	TYKW	5	S	0424.0	0425	3.0	1.5	.5		
	3750	TYKW	45	C	0648.0	0649.4	2.0	3	1		
	1470	POTS	3	S	0648.2	0648.9	1.4	10			
	536	ONDR	4	S/F	0648.4	0648.5	.5	98	12		
	1000	TYKW	5	S	0648.5	0649.0	1.5	3.5	1		
	2800	TYKW	5	S	0648.5	0649.0	1.5	7	1.5		
	3750	TYKW	29	PBI	0650.0		30.0	1	.5		
	2800	TYKW	29	PBI	0650.0		30.0	1	.5		
	2950	GORK	20	GRF	0840.6	0858.6	144.0	11			
	3100	CRIM	25	R	0845.0	0907.0	17.0	51	17		
	1470	POTS	20	GRF	0849.5	0858.4	12.0	7.2			
	3000	POTS	20	GRF	0850.0	0858.5	11.0	10.2			
	3200	BERN	21		0850.0	0909.2	120.0	.0			ONLY PAPER REC
	5200	BERN	21		0850.0U	0909.0	50.0U	22.0			ONLY PAPER REC
	3100	CRIM	40	F	0857.0	0858.0	8.0	6	3		
	950	GORK	1	S	0857.0	0858.2	4.0	5			
	9500	POTS	3	S	0906.0	0909.2	5.4	60			
	19600	BERN	3		0908.0U	0909.0U	1.0U	20.0U			
	3000	POTS	1	S	0908.2	0909.0	1.6	3.8			
	6100	KISV	4	S/F	0908.5	0909	14.0	57			
	9400	TYKW	5	S	0908.5	0909.0	2.5U	55	13 U		
	8400	BERN	3		0908.7	0909.1	2.0	54.0			
	11800	BERN	3		0908.7	0909.1	2.0	69.0			
	9100	GORK	3	S	0908.7	0909.2	1.3	66	23		
	9100	GORK	29	PBI	0908.7	0910.1	8.0	13			
	15000	KISV	8	S	0909.0	0909.2	1.0	36			
	536	ONDR	8	S	0922.5	0922.5	.2	31			
	536	ONDR	8	S	1138.2	1138.2	.2	21			
	1470	POTS	1	S	1138.5	1139.6	1.5	5.3			
	3000	POTS	1	S	1138.5	1139.2	3.5	11.6			
	2800	OTTA	1	S	1138.5	1139	1.5	5.8	2.9		
	2950	GORK	1	S	1138.9	1139.3	1.4	5.8	3		
	6100	KISV	24	R	1151.0		17.0	9			
	9500	POTS	3	S	1357.8	1358.5	1.5	12			
	1470	POTS	1	S	1358.4	1358.7	1.1	4.6			
	1470	POTS	1	S	1429.4	1430.4	1.4	5.3			
	3000	POTS	1	S	1430.0	1430.5	1.3	10.3			
	9500	POTS	1	S	1430.0	1430.4	0.5	6.6			
	2800	OTTA	20	GRF	1700.0	1705	20.0	2.4	1.2		
	9400	HUAN		S	1931.8	1956.6	60.1	5.2	4.4		0
25	9400	TYKW	5	S	0052.0	0053.0	3.0	9	3		
	3750	TYKW	5	S	0210.0	0212	5.0	2	.7		
	650	GORK	21	GRF	0840.2	0845.5	16.8	2			
	100	GORK	4	S/F	0841.3	0844.5	7.0	110			
	950	GORK	20	GRF	0842.4	0845	8.0	7	3		
	127	TORN	45	C	0843.7	0844.6	2.0	93			
	650	GORK			0846.1	0847.5		8			
	650	GORK	46	C	0846.1	0846.9	1.9	13			
	536	ONDR	8	S	1141.4	1141.4	.2	45			
	29	UPIC	2	S/F	1247.6	1247.8	.6				
	33	UPIC	2	S/F	1247.6	1247.7	.6				
	2800	OTTA	20	GRF	1535.0	1545	70.0	4.0	2.2		
	9400	HUAN		S	1539.3	1610.3	87.2	8.3	5.4		0
	2800	OTTA	27A	RF	1840.0		210.0	4.4	3.2		
	2800	OTTA	24	R	1840.0	1850	10.0	4.4	2.2		
	2800	OTTA	24P	R	1850.0		100.0	4.4			
	2800	OTTA	26	FAL	2030.0	2210	100.0	-4.4	-2.2		
	3750	TYKW	5	S	2149.0	2151.6	8.0	9	2		
	2800	OTTA	1	S	2150.0	2151.5	3.0	3.6	1.4		
	9400	TYKW	5	S	2151.0	2151.6	2.0	6	2		
	2800	TYKW	5	S	2151.0	2151.6	1.5	2	.5		
26	2800	TYKW	5	S	0046.3	0046.6	1.0	2	.5		
	1000	TYKW	5	S	0046.4	0046.7	1.5	1	.3		
	9400	TYKW	20	GRF	0116.0	0119.5	50.0	7	3		
	3750	TYKW	5	S	0116.0	0119.8	6.0	14	5		
	2695	PENT	20	GRF	0118.0	0120	30.0D	6.4			
	2800	TYKW	20	GRF	0118.0	0120	50.0	2	1		
	6100	KISV	1	S	0521.0	0521.5	1.0	3			
	6100	KISV	4	S/F	0547.5	0548.2	1.0	5			
	650	GORK	4	S/F	0547.8	0548	1.3	57			
	9100	GORK	1	S	0547.8	0548	.6	4	2		
	9400	TYKW	5	S	0547.9	0548.1	.7	3	1		
	1000	TYKW	5	S	0548.0	0548.2	1.0	4	1		
	950	GORK	1	S	0548.0	0548.1	.7	2.5			
	3750	TYKW	29	PBI	0622.0		50.0	6	2.5		
	6100	KISV	4	S/F	0711.0	0712.2	2.0	6			
	260	ONDR	42	SER	0716.0		169.0	35	3		
	2950	GORK	1	S	0847.8	0848	.5	3	1		
	9100	GORK	1	S	0848.0	0848.1	.5	7	3		
	536	ONDR	4	S/F	0859.2	0900	1.0	39	2		
	536	ONDR	8	S	1012.0	1012	.2	30			

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

JULY 1980

DAY OF MONTH	FREQUENCY	STATION	TYPE		STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} MEAN	INT	POLARIZATION OR REMARKS
26	930	BORD	8	S	1033.6	1033.6	.1	10	1		
	260	ONDR	41	F	1339.0	1346.3	25.0	10	2		
	2800	OTTA	21	GRF	1730.0	1800	100.0	4.2	2.2		
	2800	OTTA	1	S	1731.0	1732	0.0	5.6	2.0		
	9400	HUAN		S	1800.3	1829.0	58.5	3.4	2.9		R
	2800	OTTA	20	GRF	2030.0	2110	140.0	3.0	2.4		
	3750	TYKW	8	S	2328.7	2328.8	.3	4	1		
	9400	TYKW	8	S	2328.7	2328.8	.3	4.5	1.5		
27	260	ONDR	43	NS	0005.0		375.0D	135	4		
	200	HIRA	44	NS	1940.0E	2020	280.0	10 U	5		R
	3750	TYKW	20	GRF	0430.0	0645	150.0	5	2.5		
	2800	TYKW	21	GRF	0430.0	0645	150.0	4	2		
	9400	TYKW	20	GRF	0430.0	0645	150.0	7	3		
	2800	TYKW	45	C	0435.0	0439.5	15.0	4	2		
	3200	BERN	1		0914.0	0915.0U	7.0	.8			ONLY PAPER REC
	5200	BERN	1		0914.0	0915.0U	7.0	7.0			
	1470	POTS	1	S	1220.6	1222.6	3.0	4.7			
	2800	OTTA	2	S/F	1222.0	1222.3	1.0	5.4	3.4		
	9400	HUAN		S	1222.1	1222.8	1.5	19.2	9.3		R
	33	UPIC	46	C	1222.2		6.2				
	9500	POTS	8	S	1222.3	1223.0	1.1	16			
	3000	POTS	1	S	1222.3	1222.8	1.3	7.4			
	127	TORN	45	C	1222.4	1222.7	1.5	340	120		
	113	POTS	42	SER	1222.5	1222.7	11.0	1400	20		III
	234	POTS	4	S/F	1222.5	1222.6	8.0	275	30		III
	29	UPIC	46	C	1222.7	1223.6	6.0				
	2800	OTTA	2	S/F	1235.0	1237	10.0	3.8			
	536	ONDR	2	S/F	1235.7	1237.3	2.5	31	3		
	1470	POTS	3	S	1236.2	1237.1	1.0	7.3			
	127	TORN	45	C	1240.5	1241.7	3.4	190	37		
	2800	OTTA	1	S	1445.0	1446	7.0	3.6	1.2		
	2800	TYKW	5	S	2140.5	2141.2	1.5	5	1.5		
	1000	TYKW	5	S	2140.5	2141.3	1.5	5	1.5		
28	2800	TYKW	20	GRF	0000.0	0016	60.0	3	1.5		
	2695	PENT	21	GRF	0002.0	0021	50.0	3.6	1.8		
	3750	TYKW	21	GRF	0005.0	0016	50.0	4	2		
	1000	TYKW	5	S	0007.0	0008.4	4.0	5	1		
	3750	TYKW	5	S	0008.0	0008.3	2.0	4.5	1.5U		
	9400	TYKW	5	S	0008.0U	0008.4U	2.0U	5 U	1.5U		
	2695	PENT	1	S	0008.1	0008.3	1.0	3.6	1.8		
	9400	TYKW	20	GRF	0725.0	0740	45.0	4	2		
	3100	CRIM	24	R	0732.0	0842.0		6			
	5200	BERN	20		0733.0	0744.0U	57.0U	5.0			ONLY PAPER REC
	2800	TYKW	20	GRF	0733.0	0740	50.0	2	1		
	3750	TYKW	20	GRF	0733.0	0740	50.0	6	3		
	3200	BERN	20		0733.0	0744.0U	57.0U	.8			ONLY PAPER REC
	100	GORK	8	S	0739.6	0739.8	.8	90			
	2800	OTTA	20	GRF	1700.0	1740	140.0	3.0	1.8		
29	100	GORK			0333.0	0344.5		1100			
	100	GORK	41	F	0333.0	0337.0	14.5	160 D			
	100	GORK			0333.0	0339.1		160 D			
	3100	CRIM	1	S	1007.0	1014.0	19.0	4	2		
	3200	BERN	2		1008.3	1010.7	22.0	.8			ONLY PAPER REC
	5200	BERN	20		1008.3	1012.8	16.0	5.0			
	100	GORK	4	S/F	1112.5	1115	3.9	90			
	2800	OTTA	26A	FAL	1235.0	1615	220.0	-8.4			
	2800	OTTA	21	GRF	1236.0	1313	150.0	13.4	6.7		
	1470	POTS	27	RF	1236.0	1251.4	51.0	15			
	3000	POTS	27	RF	1238.0	1317	87.0	18.4			
	5200	BERN	20		1238.0	1332.0	125.0	14.0			ONLY PAPER REC
	3200	BERN	20		1238.0	1317.3	125.0	.8			ONLY PAPER REC
	9500	POTS	27	RF	1247.0	1323	71.0	18			
	2800	OTTA	1	S	1248.0	1253.5	8.0	3.4	2.3		
	9400	HUAN		S	1252.0	1330	69.6	11.6	6.6		R
	2800	OTTA	1	S	1316.0	1317	2.0	3.4	1.7		
30	2800	OTTA	20	GRF	1110.0	1200	190.0	2.8	1.4		
31	3750	TYKW	5	S	0050.0	0050.7	2.0	1.5	.5		
	2695	PENT	2	S/F	0131.0	0133	5.0	3.4	1.7		
	1470	POTS	1	S	0917.2	0918.0	2.3	1.5			
	2800	TYKW	20	GRF	2240.0	2300	120.0	2	1		
	3750	TYKW	20	GRF	2240.0	2300	120.0	5	2.5		
	2800	OTTA	20	GRF	2242.0	2255	85.0	4.2	2.8		

Reports are received routinely from the following observatories:

ARCE = Arcetri
BERN = Berne
BORD = Bordeaux
CRIM = Crimea
DWIN = Dwingeloo
GORK = Gorky
HARS = Harestua
HIRA = Hiraiso
HUAN = Huancayo
IRKU = Irkutsk
IZMI = IZMIRAN
KISV = Kislovodsk
KRAK = Krakow
MANI = Manila
NAGO = Nagoya
NOBE = Nobeyama
ONDR = Ondrejov
OTTA = Ottawa
PENT = Penticton
POTS = Potsdam
SOAP = Sao Paulo
SGMR = Sagamore Hill
SYDN = Sydney
TORN = Torun
TYKW = Toyokawa
TRST = Trieste
UPIC = Upice
VORO = Voroshilov

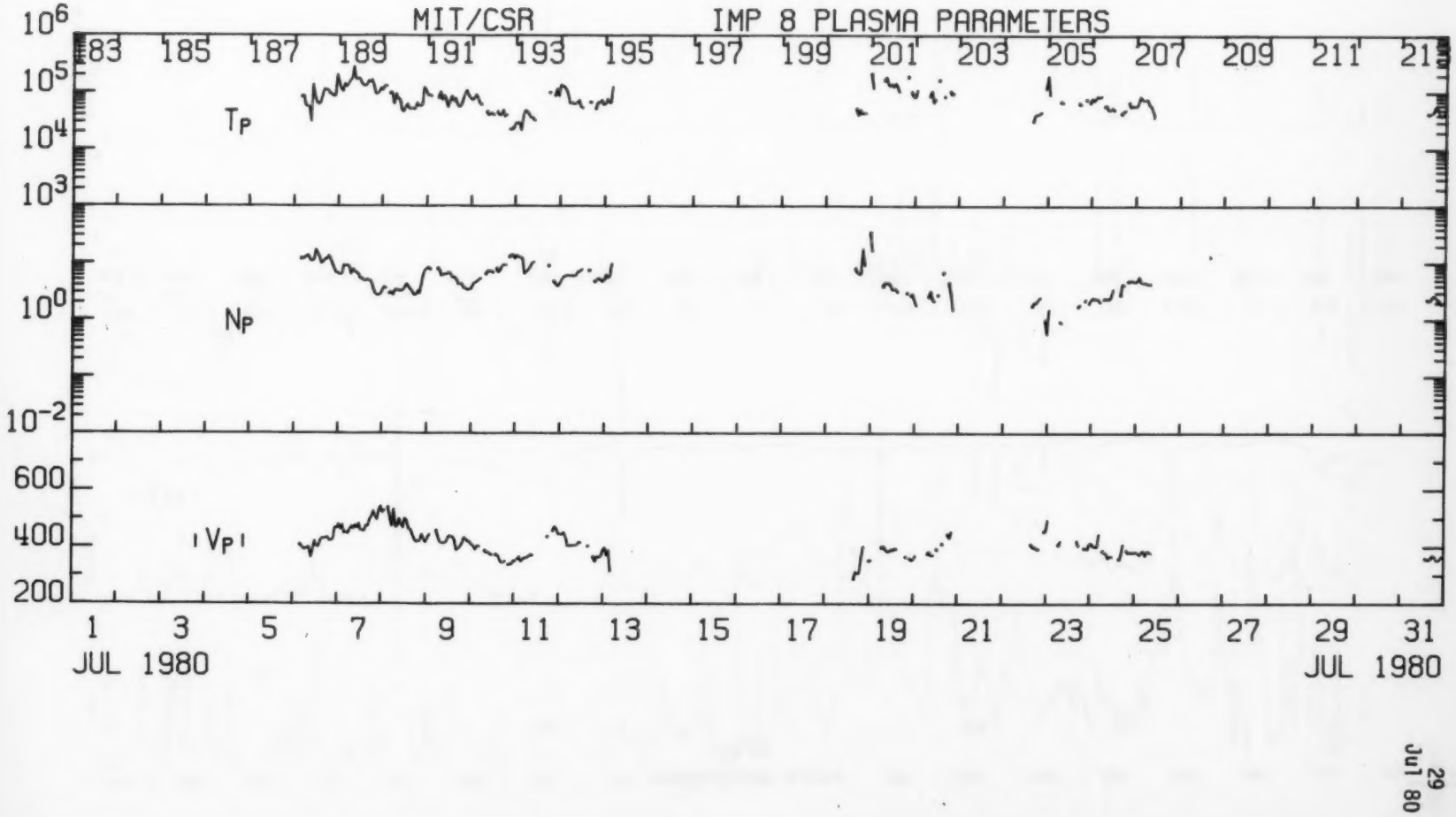
Explanation of Type Code:

1 Simple 1
2 Simple 1F
3 Simple 2
4 Simple 2F
5 Simple
6 Minor
7 Minor +
8 Spike
20 Simple 3
21 Simple 3A
22 Simple 3F
23 Simple 3AF
24 Rise
25 Rise A
26 Fall
27 Rise and Fall
28 Precursor
29 Post Burst Increase
30 Post Burst Increase A
31 Post Burst Decrease
32 Absorption
40 Fluctuation
41 Group of Bursts
42 Series of Bursts
43 Onset of Noise Storm
44 Noise Storm in Progress
45 Complex
46 Complex F
47 Great Burst
48 Major
49 Major +

1A Simple 1A
3A Simple 2A
21A Simple 3A GRF
2A Simple 1AF
4A Simple 2AF
240 Rise only
240F Rise only F
24P Post Rise
24PF Post Rise F
26A Fall A
260 Fall Only
26F Fall F
27F Rise and Fall F
27AF Rise and Fall AF
31A P.B. Decrease A
32A Absorption A
46F Complex F

IMP 8 SOLAR WIND PLASMA

JULY 1980

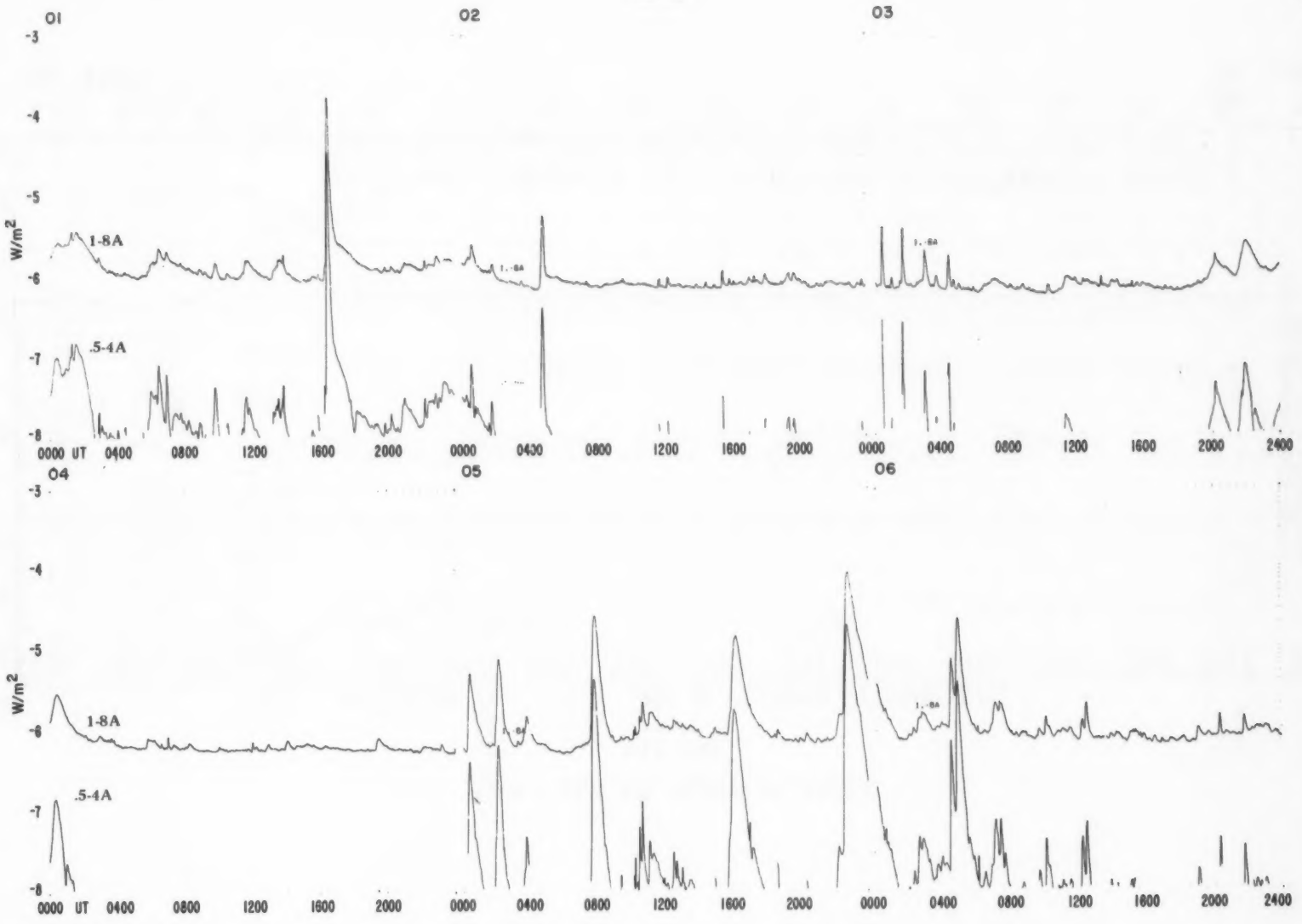


29 Jul 80

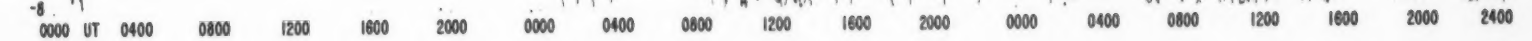
30 Jul 80

SMS-GOES X-RAYS

JULY 1980

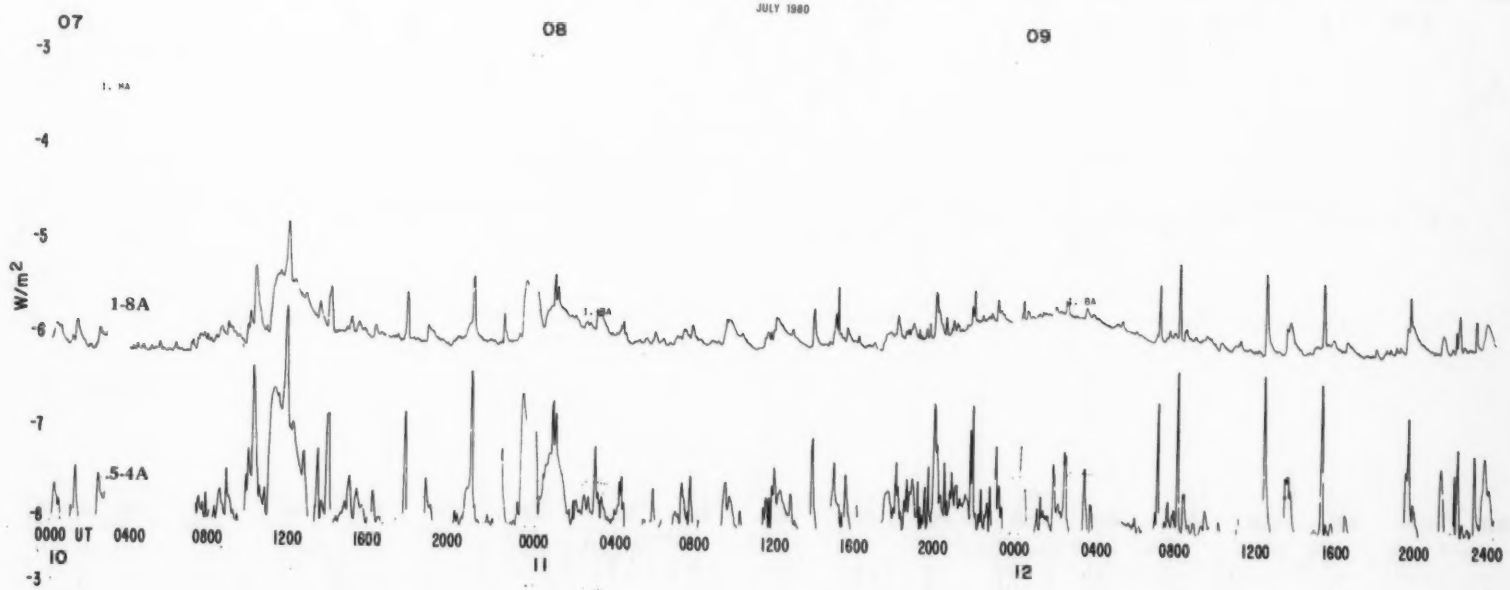


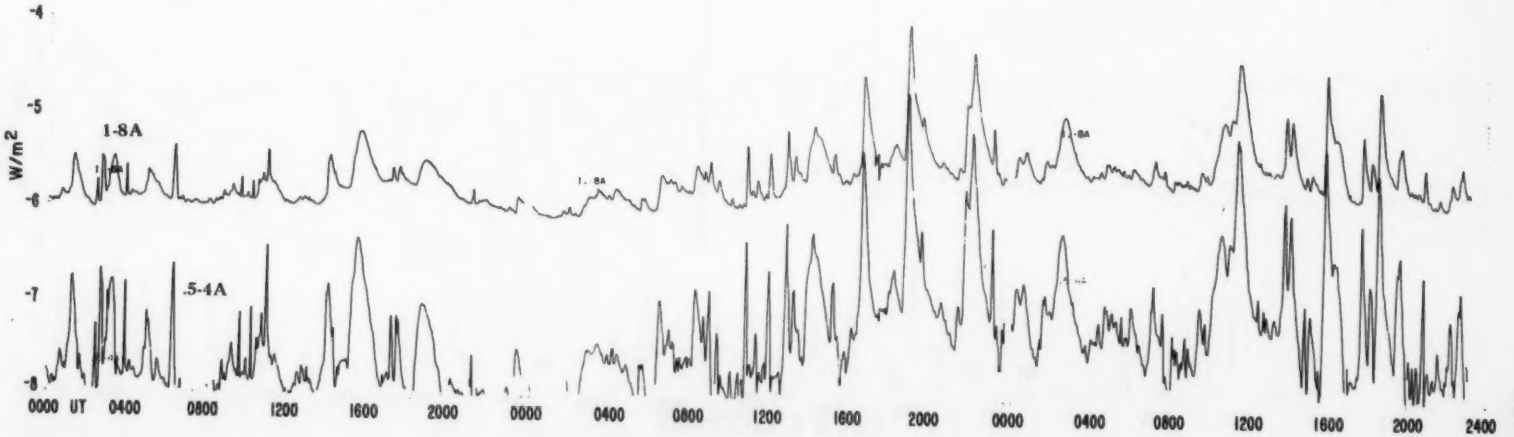
SMS-GOES X-RAYS



SMS-GOES X-RAYS

JULY 1980

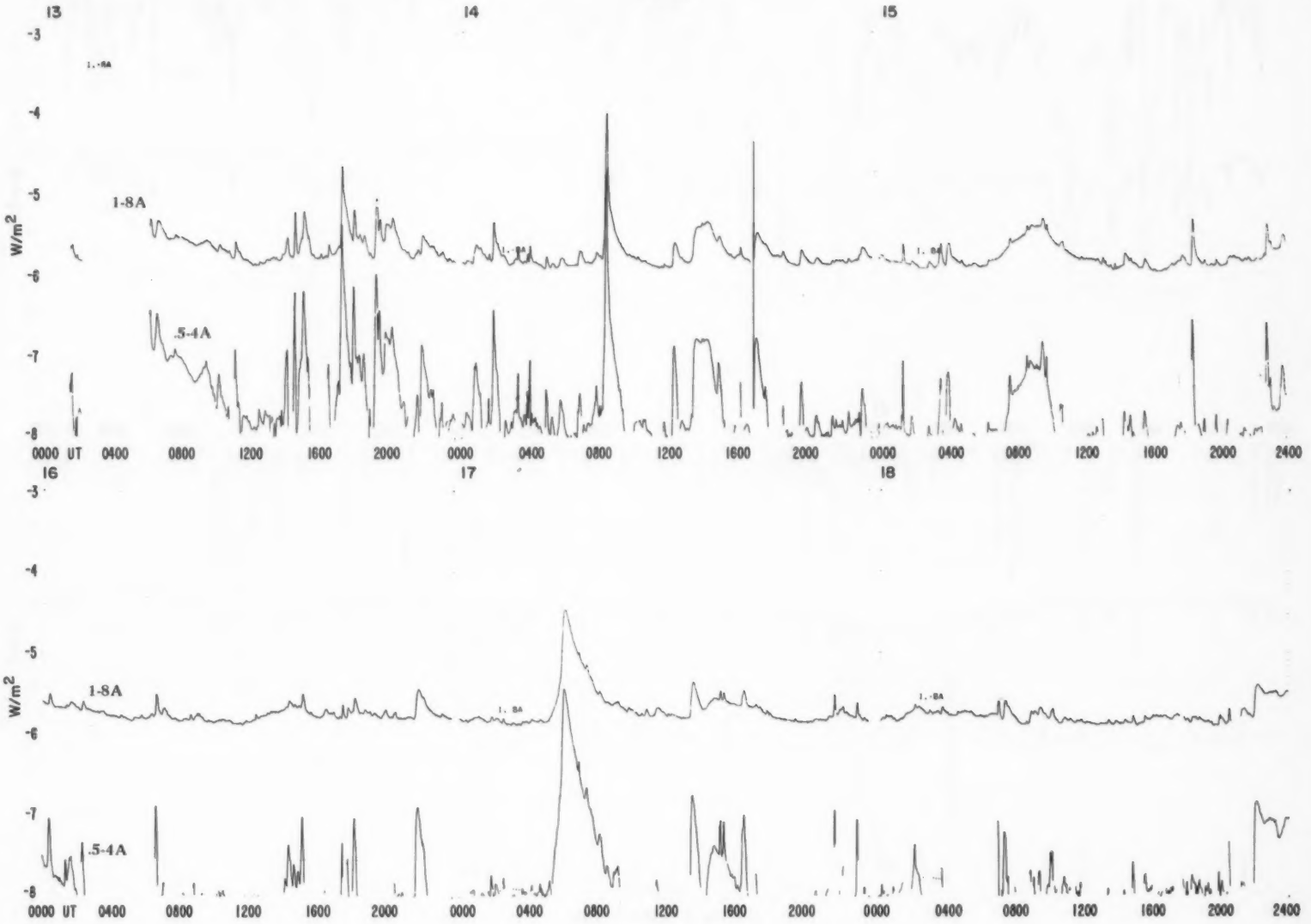




31 Jul 80

SMS-GOES X-RAYS

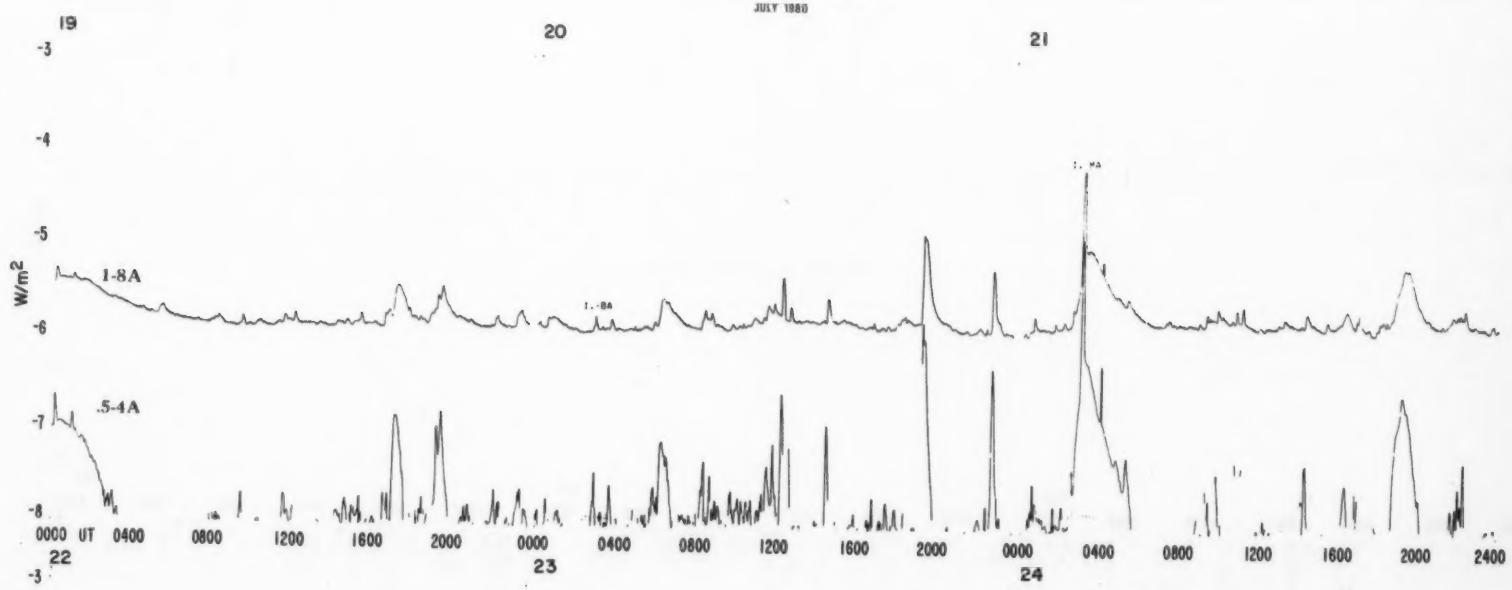
JULY 1980

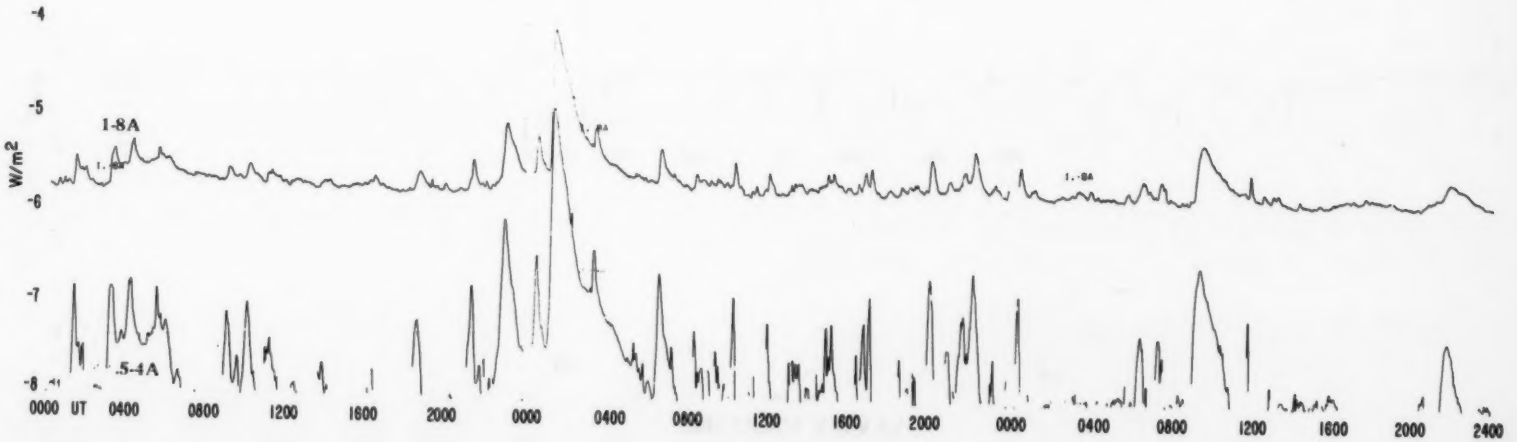


SMS-GOES X-RAYS

SMS-GOES X-RAYS

JULY 1980

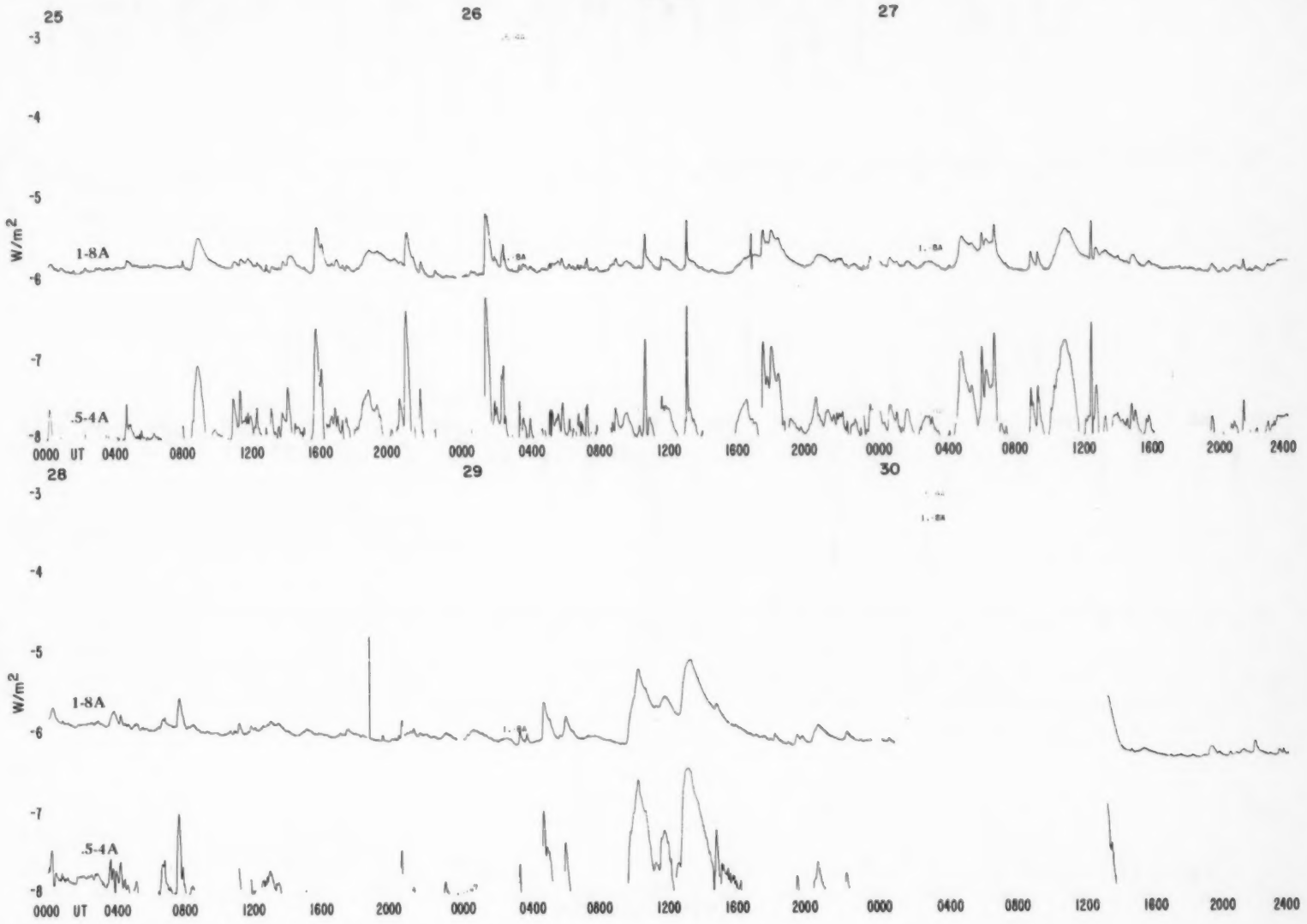




33
Jul 80

SMS-GOES X-RAYS

JULY 1980



-8

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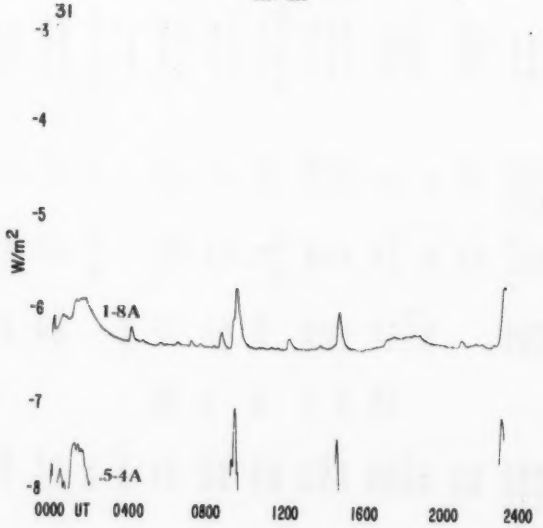
SMS-GOES X-RAYS

JULY 1980



MASS EJECTIONS FROM THE SUN

JULY 1980

Station	Date 1980	Observed UT Start	Max	End	Location RA°	R/Ro	Wavelength	Type of Event
WEIS	Jul 01	1627.8		1648.0			60-400 MHz	II Harmonic
HARV	Jul 01	1628		1641			Decimeter; meter	IV
HARV	Jul 01	1628		1651			Meter	II
DWIN	Jul 01	1628.6		1650.0			Decimeter	IV
BIGB	Jul 04	0018	0039	0120	067	1.0	H-alpha	A
DWIN	Jul 04	1356.5		1358.0			Decimeter	IV
CULG	Jul 05	0204		0250			Meter	IV Weak
DWIN	Jul 05	0735.0		0749.0			Decimeter	IV Zebra patterns
DWIN	Jul 05	1101.0		1112.0			Decimeter	IV
DWIN	Jul 05	1556.1		1612.0			Decimeter	IV
CULG	Jul 05	2238		0000			Meter	IV Weak
CULG	Jul 05	2238		2253			Decimeter	IV
HARV	Jul 05	2238		2255			Decimeter; meter	IV
HARV	Jul 05	2248		2255			Meter	II
CULG	Jul 05	2251		2254	280	0.5	80 MHz	Type II?
CULG	Jul 05	2251		2254	270	1.0	43 MHz	Type II?
CULG	Jul 06	0418		0500			Decimeter; meter	IV
CULG	Jul 06	0429.5		0457			Meter	Possible II
LEAR	Jul 06	0438.1		0447.6			Meter	IV
CULG	Jul 06	0442		0448			Decimeter	IV
DWIN	Jul 06	0442.0		0448.0			Decimeter	IV Pulsations
CULG	Jul 06	2300		0200	330	0.9-1.3	160 MHz	Continuum or IS, C*
CULG	Jul 06	2300		0200	330	1.3-1.6	80 MHz	Continuum or IS, C*
CULG	Jul 06	2300		0200	310-330	1.0-2.0	43 MHz	Continuum or IS, C*
HALE	Jul 08	2124			020	1.17	H-alpha	Q
HALE	Jul 08	2124			305	1.25	H-alpha	A
HAOC	Jul 09	0011		0100	288	5.2		EL; 480 km/s
DWIN	Jul 09	1514.4		1517.8			Decimeter	IV
BIGB	Jul 09	1628	1639	1717	102-104	1.0	H-alpha	A
BIGB	Jul 09	1905	1909	1924	104	1.0	H-alpha	SP
BIGB	Jul 11	1855	1903	1906	105	0.964	H-alpha	SP
HALE	Jul 11	1922E		2207	107	1.47	H-alpha	SP
BIGB	Jul 11	2215	2221	2232	106	0.964	H-alpha	A
NRLC	Jul 12	0855			245-270	4.8	White light	Loop or 2 prongs
BIGB	Jul 12	1824	1834	1834U	108	0.929	H-alpha	A
MITK	Jul 13	0540		0600	118	1.0	H-alpha	A
HALE	Jul 13	2022E	2023	2040	208	1.25	H-alpha	Q
BIGB	Jul 15	1603	1612	1625	110	1.0	H-alpha	A
BIGB	Jul 15	1645	1651	1705	073-075	0.991	H-alpha	A
LEAR	Jul 17	0555.2		0609.3			Meter	IV
NRLC	Jul 18	0541			280-297	5.0	White light	Bright flame
MITK	Jul 19	0509		0823D	105	1.0	H-alpha	A
HALE	Jul 19	1734E		1934D	096	1.14	H-alpha	A
MITK	Jul 21	0307E		0341	250	0.9	H-alpha	S
BIGB	Jul 21	1720	1729	1800	067-070	1.0	H-alpha	SP
BIGB	Jul 22	1545	1556	1618	254	0.991	H-alpha	SP
BIGB	Jul 23	0014E	0018	0050	294-296	1.0	H-alpha	Uncertain
CULG	Jul 23	0054	0111				Decimeter; meter	IV
CULG	Jul 23	0100		0123			Meter; dekameter	II
PALE	Jul 23	0105.5		0449.0			Meter	IV
LEAR	Jul 23	0110.8		0749.5			Meter	IV
CULG	Jul 23	0111		0730			Decimeter; meter	IV
HALE	Jul 23	1846E	2034	2049	292	1.19	H-alpha	Q
HALE	Jul 24	1721E		2010D	257	1.17	H-alpha	Q
BIGB	Jul 25	1708	1715	1745	125	1.0	H-alpha	SP
BIGB	Jul 26	2350	0001	0009D	254-251	1.0	H-alpha	SP
WEIS	Jul 27	1300.2		1304.2			50-180 MHz	II Harmonic
BIGB	Jul 27	2331	2347	2358	255	0.991	H-alpha	A
WEIS	Jul 28	1311.5		1316.3			100-150 MHz	II
BIGB	Jul 28	1630	1742	1857	240-245	1.0	H-alpha	SP
BIGB	Jul 29	2225	2230	2250	258	1.0	H-alpha	SP
BIGB	Jul 30	1453	1501	1503D	295	1.0	H-alpha	A

MASS EJECTIONS FROM THE SUN

JULY 1980

QUALIFIERS ON START, MAX AND END TIMES
D = event ended after the tabulated time
E = event began before the tabulated time
U = uncertain time

TYPE OF EVENT
A = eruptive active region prominence
CB = coronal cloud bubble
D = coronal depletions
E = coronal enhancement
EL = coronal expanding loop
II = Type II radio burst
IVm = moving Type IV radio burst
Q = eruptive quiescent prominence
R = coronal ray or streamer
S = flare-surge if there is a known flare association
SP = flare-spray if there is a known flare association
* = movement may be caused by ionospheric refraction

REPORTING STATIONS
BIGB = Big Bear
BLEN = Bleien
CULG = Culgoora
DWIN = Dwingeloo
GEOR = Georgiana
HALE = Haleakala
HAOC = High Altitude Observatory's SMM Coronagraph/Polarimeter
HAOK = High Altitude Observatory's MARK-III Coronameter at Mauna Loa
HARV = Harvard (Fort Davis)
LEAR = Learmonth
MANI = Manila
MITK = Mitaka
NRLC = Naval Research Laboratory's White-Light Coronagraph Experiment on P78-1
PALE = Palehua
SGMR = Sagamore Hill
WEIS = Weissenau
WEND = Wendelstein
UDAI = Udaipur

NOTE: Because only a small fraction of the data taken by satellite-borne coronagraph had been analyzed at the time this table was assembled, many events are defined solely by ground-based observatory reports.

MISCELLANEOUS DATA

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ACTIVE REGIONS
CARRINGTON ROTATION 1695
(May 12 to June 8, 1980)

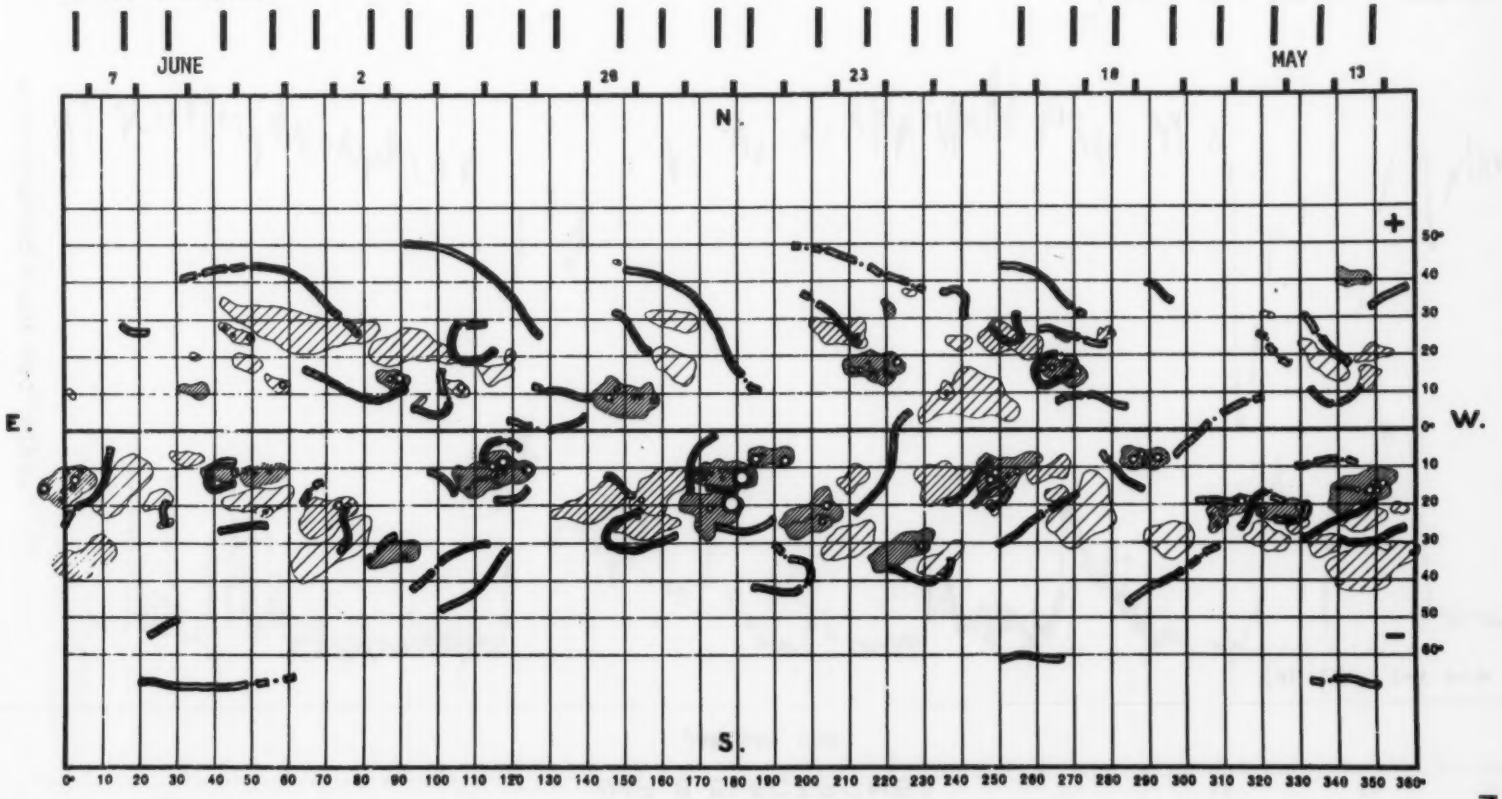
Region No.	Coordinates Lat.	Long.	IMP	Age at CMP	Spot-less Region	Region No. in Rotation 1694	Activity at West Limb
1	22°S	357	1	>6	x		decreasing
2	20 N	350	1	>6	x	3	decreasing
3	37 S	349	2	>6			decreasing
4	14 N	348	1	>6	x	4	decreasing
5	16 S	347	5	>6			decreasing
6	24 S	347	1	>6	x		decreasing
7	40 N	345	2	0			decreasing
8	31 S	337	1	>6	x	5	dispersed
9	26 S	329	1	+2	x		disappeared
10	22 S	325	3	+5			decreasing
11	30 N	322	1	+2	x		dispersed
12	20 S	314	2	+5			decreasing
13	24 S	308	2	+4			decreasing
14	8 S	289	4	+5			decreasing
15	25 N	279	2	+2			dispersed
16	15 N	267	4	+5			decreasing
17	25 N	267	1	-2	x		decreasing
18	17 S	265	1	>6	x	11	decreasing
19	11 S	264	1	>6	x		decreasing
20	24 N	254	1	>6	x		dispersed
21	12 S	252	5	>6			decreasing
22	21 S	248	1	-2	x		dispersed
23	9 N	243	1	>6	x		dispersed
24	23 N	240	1	>6	x	15	dispersed
25	10 N	236	2	>6			decreasing
26	14 S	235	1	>6	x	13	decreasing
27	37 N	227	1	-1	x		disappeared
28	32 N	224	2	>6			decreasing
29	32 N	221	1	-5	x		?
30	14 N	219	2	-3			decreasing
31	17 N	217	4	+5			decreasing
32	13 S	211	1	>6			dispersed
33	30 S	210	1	>6	x		dispersed
34	25 N	208	2	>6			decreasing
35	22 S	200	2	>6		22	decreasing
36	26 S	200	2	>6			decreasing
37	7 S	189	5	>6			decreasing
38	12 S	177	6	>6			decreasing
39	22 S	173	6	>6			decreasing
40	16 S	159	2	>6		32	decreasing
41	2 S	156	2	>6			decreasing
42	8 N	151	5	>6			decreasing
43	20 S	142	1	>6	x	32	decreasing
44	11 S	120	3	-2			stable
45	20 N	120	1	-4	x		disappeared
46	12 S	114	5	>6			decreasing
47	12 N	105	2	>6		38	decreasing
48	7 N	95	1	+3	x		dispersed
49	23 N	93	1	>6	x	41	decreasing
50	32 S	89	2	>6			decreasing
51	14 N	88	3	-2			stable
52	22 S	71	3	>6		43	decreasing
53	27 N	63	1	>6	x		decreasing
54	12 N	57	2	>6		49	decreasing
55	11 S	53	2	>6			decreasing
56	21 S	53	2	+1			disappeared
57	27 N	47	2	-2			decreasing
58	11 S	43	3	+5			decreasing
59	12 N	36	1	-2	x		decreasing
60	7 S	34	1	+3	x		dispersed
61	24 S	28	1	+2	x		disappeared
62	33 S	6	1	>6	x	58	dispersed
63	14 S	1	5	>6			decreasing

SYNOPTIC SOLAR MAP

CARRINGTON ROTATION 1695

May 12 – June 8, 1980

MEUDON OBSERVATORY

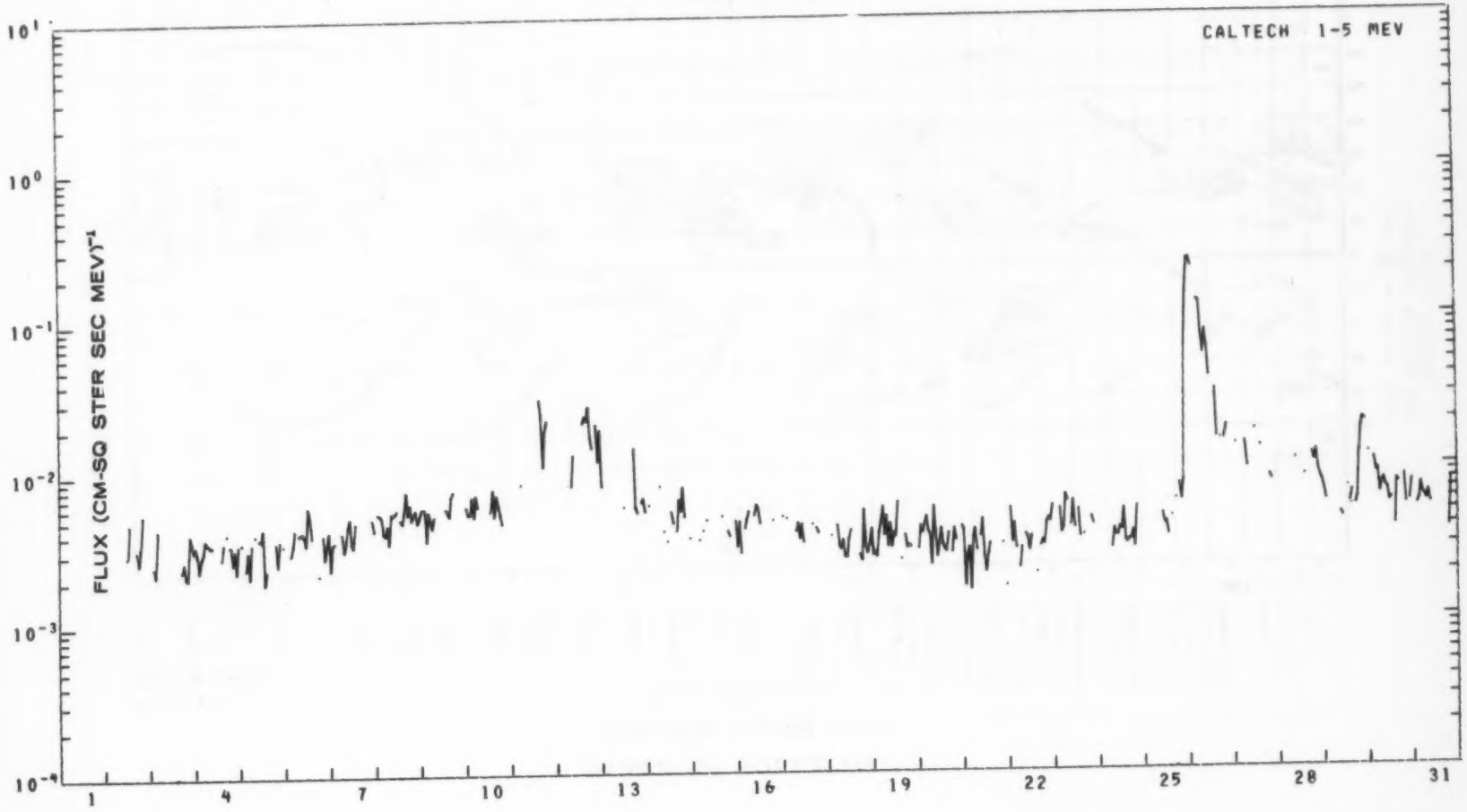


41
Misc
May-Jun 80

42
Misc
Jan 80

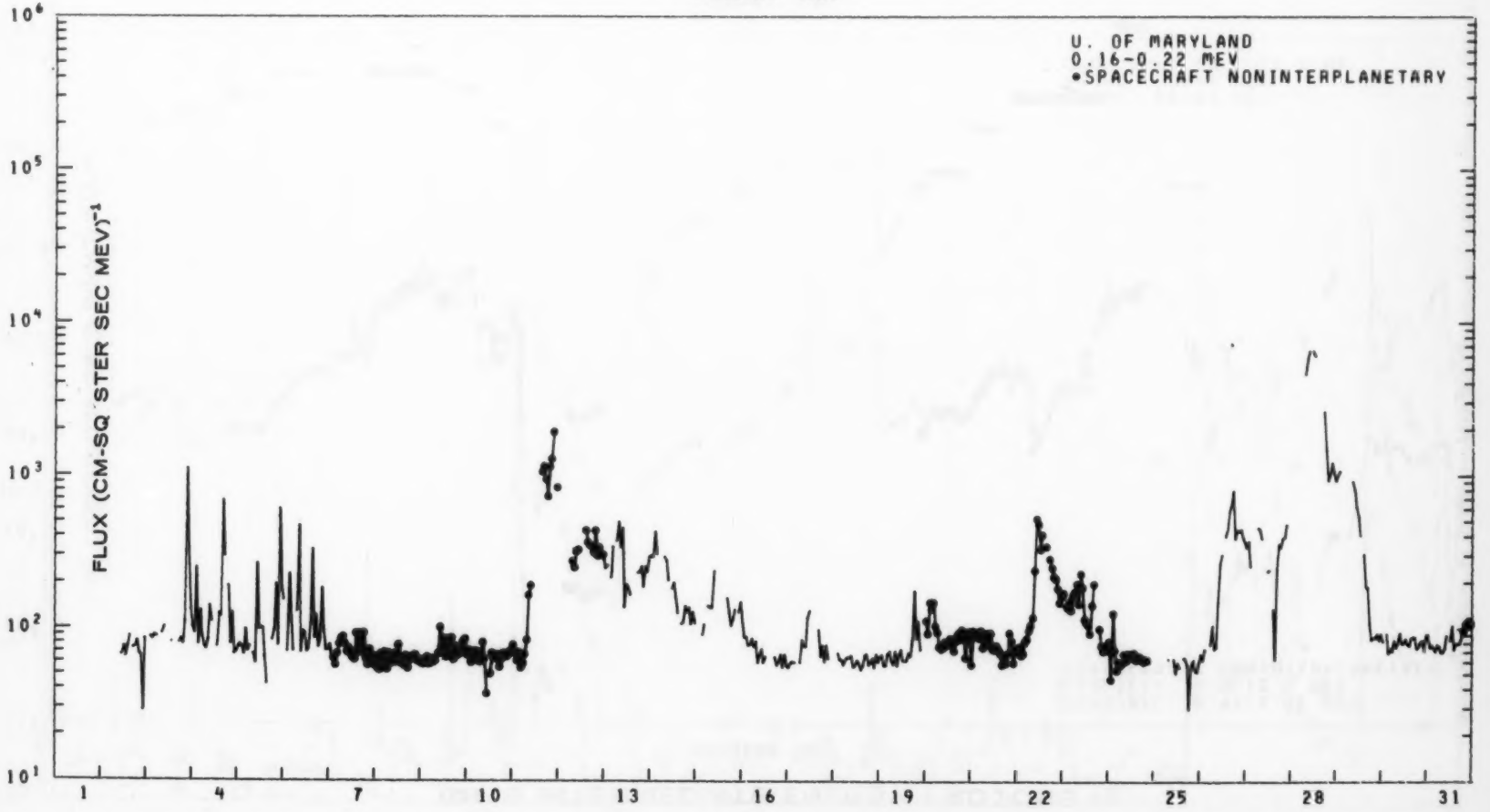
IMP 8 ELECTRONS

JANUARY 1980



IMP 8 LOW ENERGY PROTONS

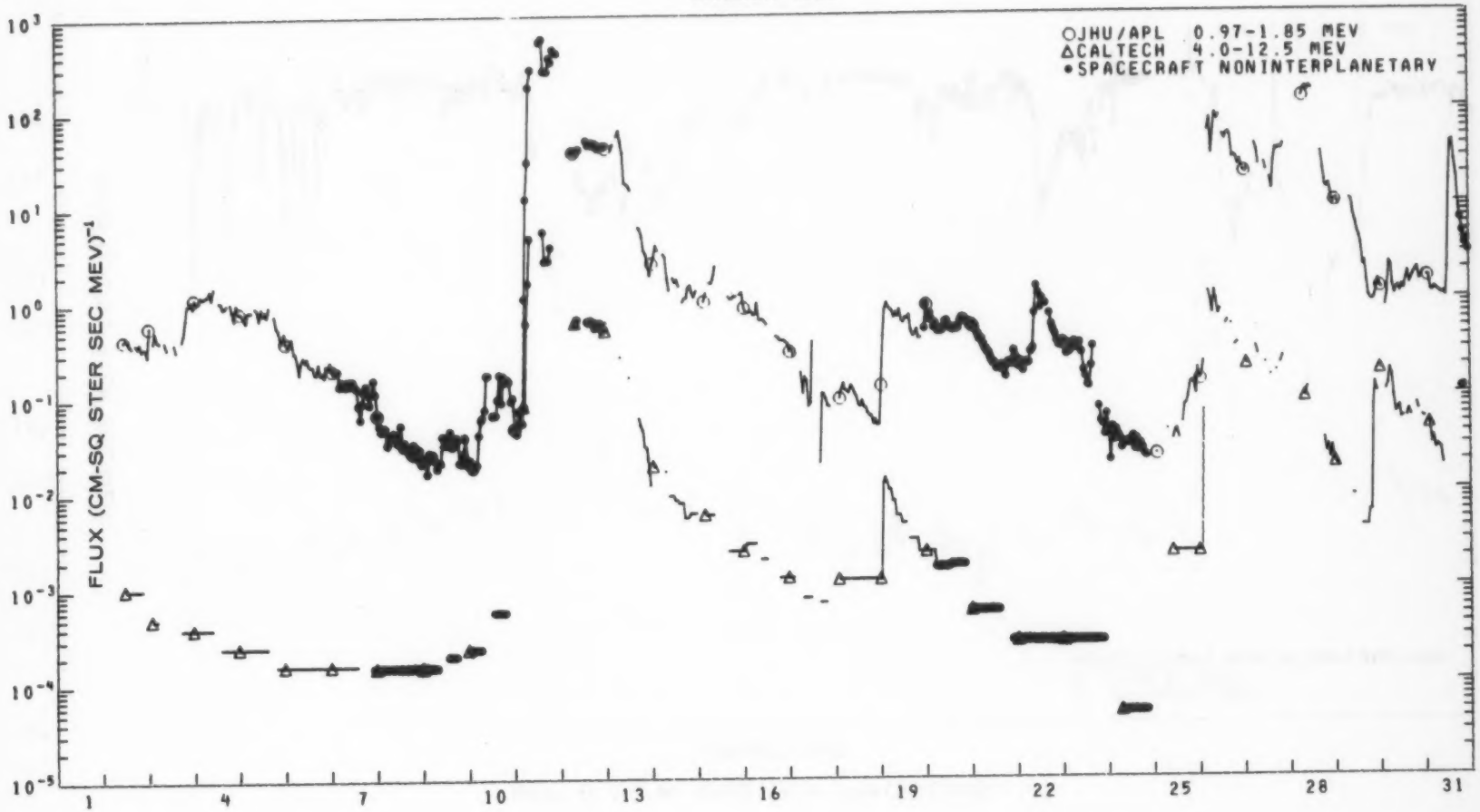
JANUARY 1980



43
Misc
Jan 80

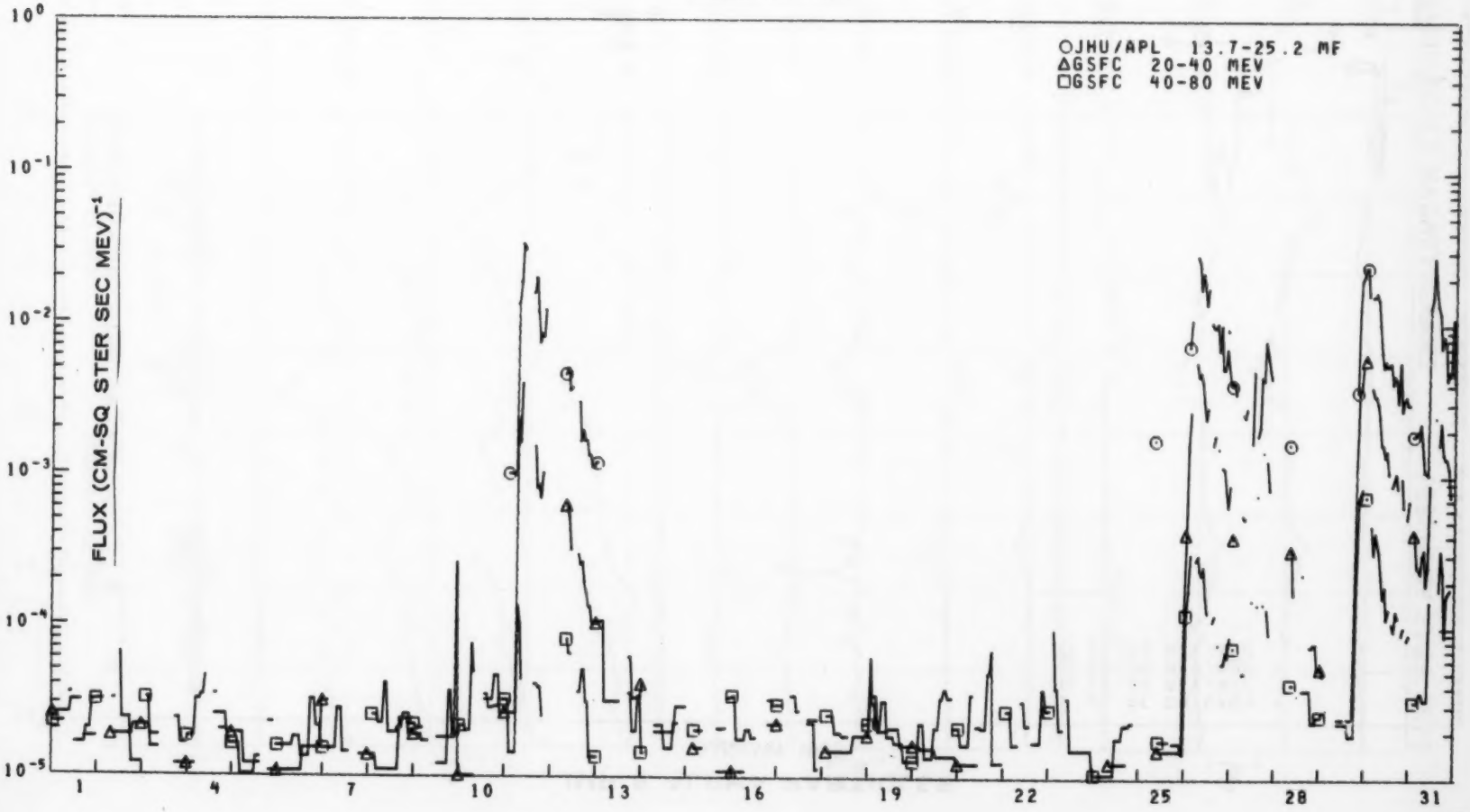
IMP 8 INTERMEDIATE ENERGY PROTONS

JANUARY 1980



IMP 8 HIGH ENERGY PROTONS

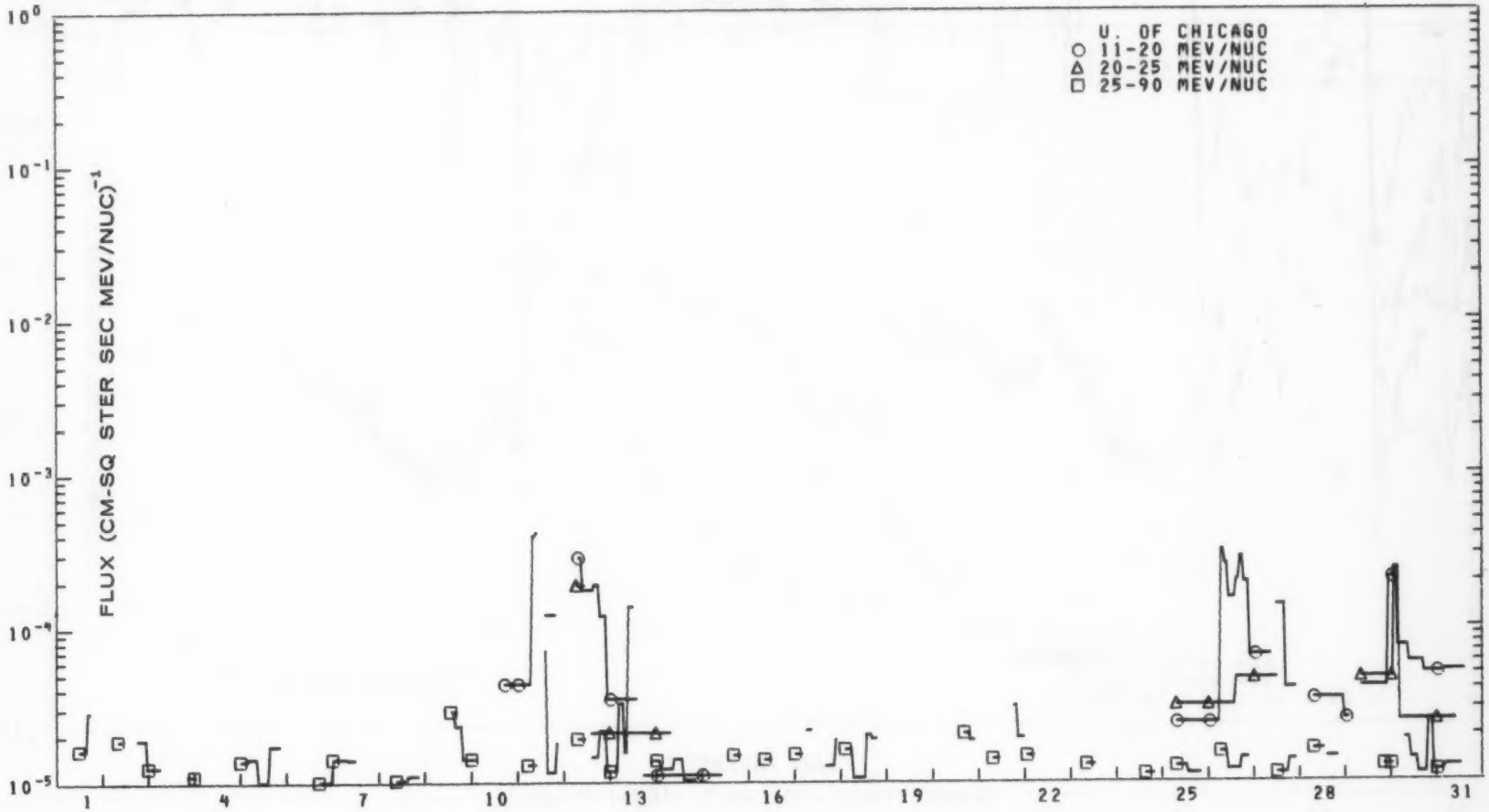
JANUARY 1980



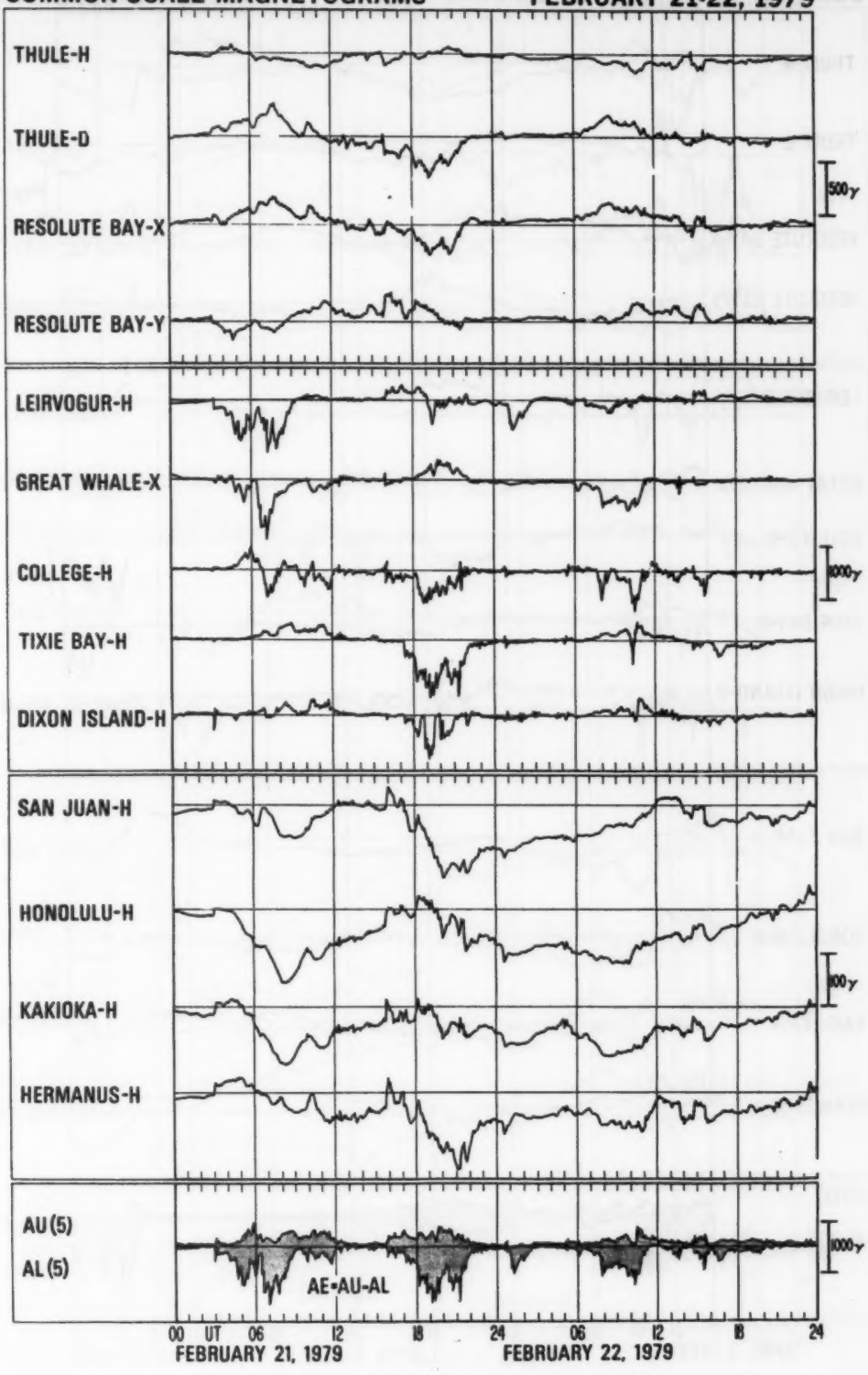
45
Misc
Jan 80

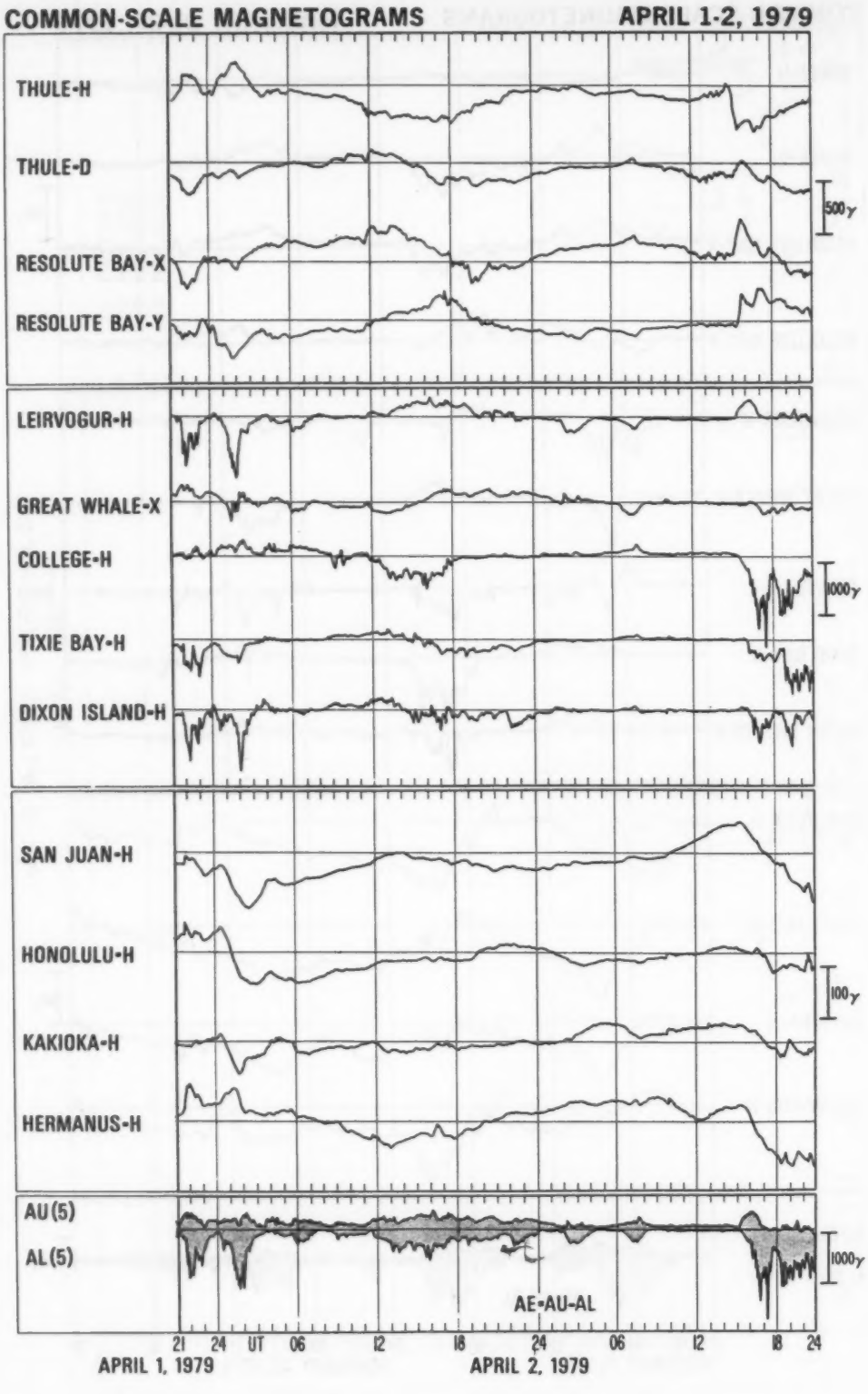
IMP 8 ALPHA PARTICLES

JANUARY 1980

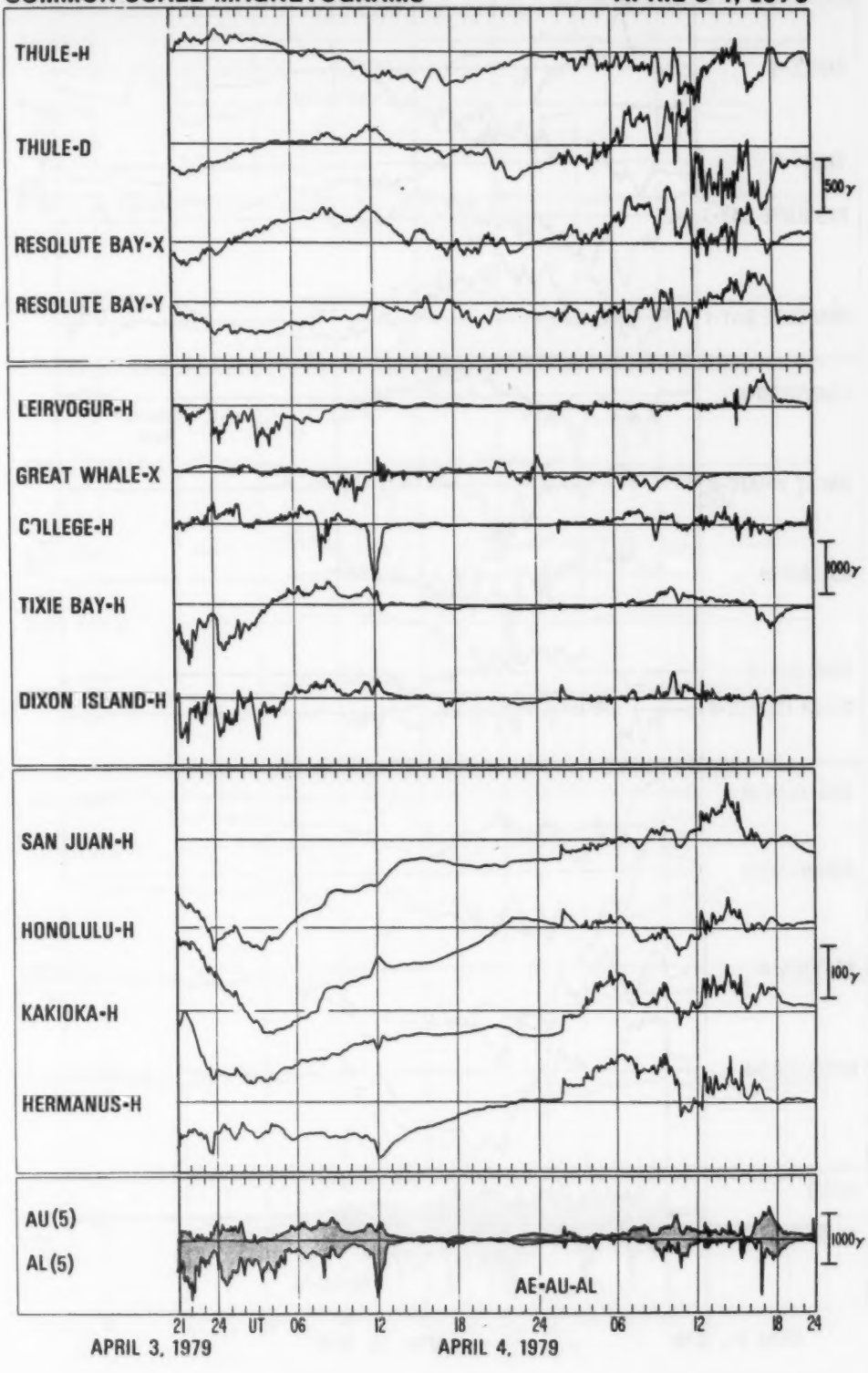


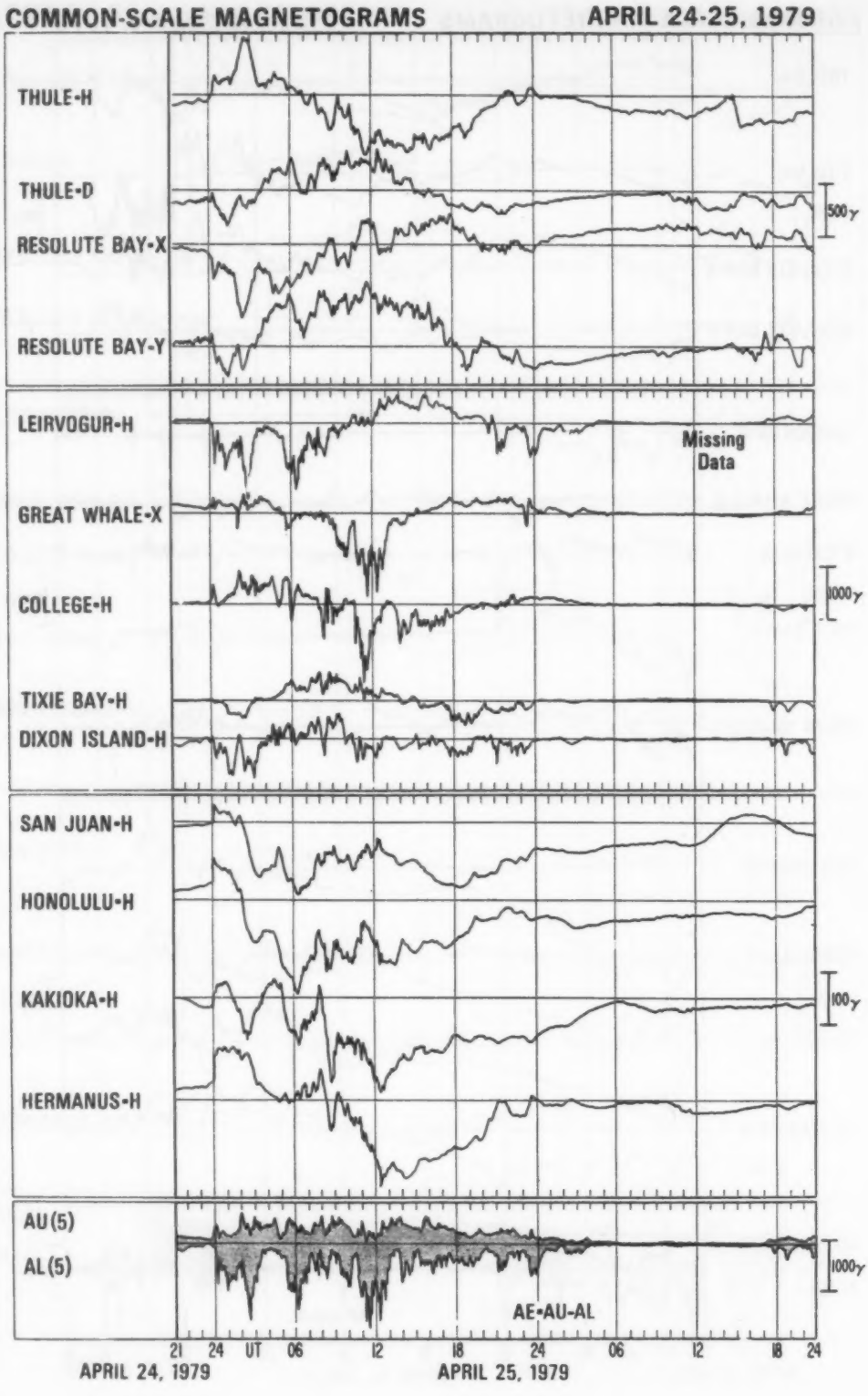
COMMON-SCALE MAGNETOGRAMS FEBRUARY 21-22, 1979



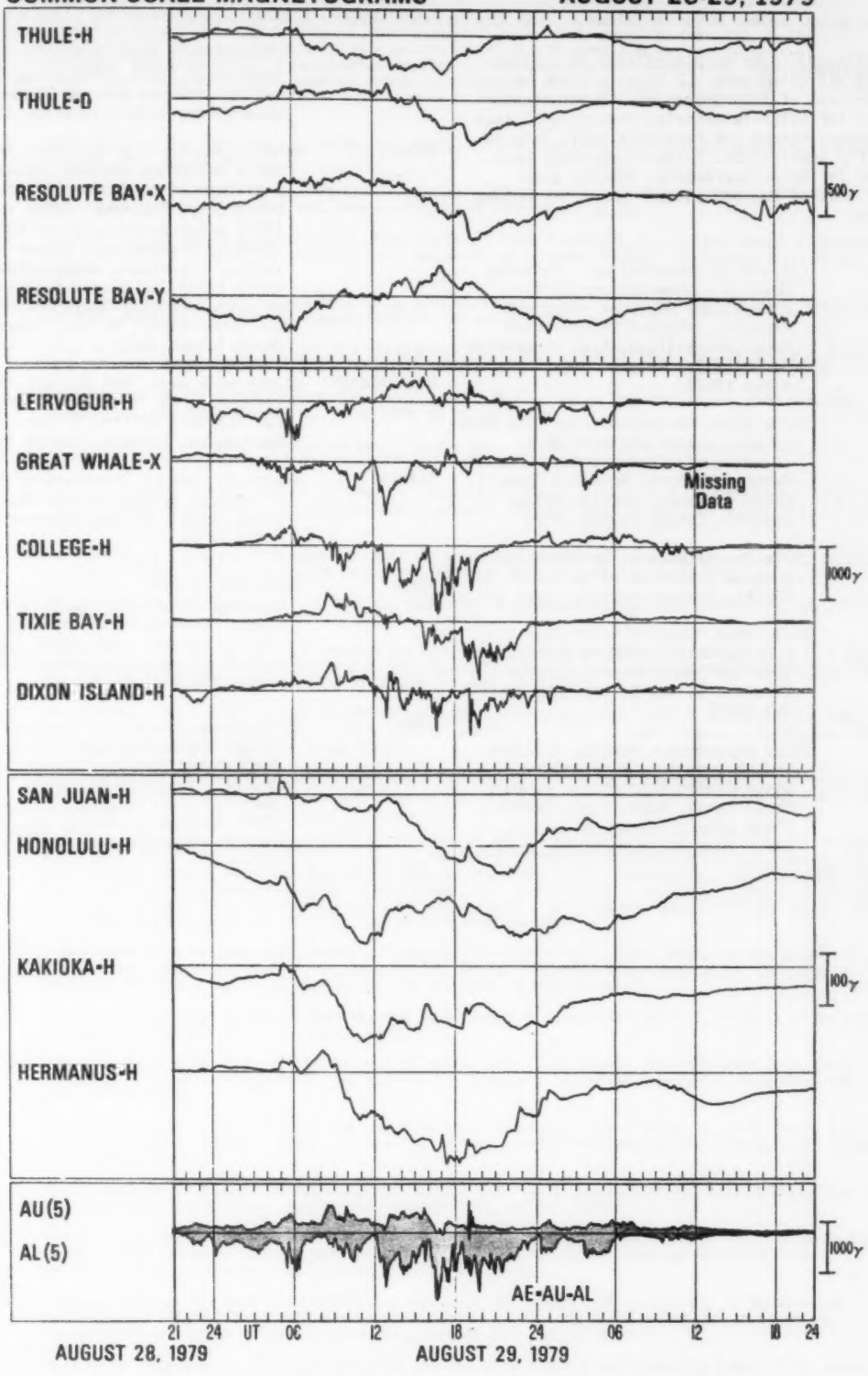

COMMON-SCALE MAGNETOGRAMS
APRIL 1-2, 1979
THULE-H
THULE-D
RESOLUTE BAY-X
RESOLUTE BAY-Y
500γ
LEIRVOGUR-H
GREAT WHALE-X
COLLEGE-H
TIXIE BAY-H
DIXON ISLAND-H
1000γ
SAN JUAN-H
HONOLULU-H
KAKIOKA-H
HERMANUS-H
100γ
AU(5)
AL(5)
AE-AU-AL
1000γ
21 24 UT 06 12 18 24 06 12 18 24
APRIL 1, 1979
APRIL 2, 1979

COMMON-SCALE MAGNETOGRAMS APRIL 3-4, 1979




COMMON-SCALE MAGNETOGRAMS
APRIL 24-25, 1979
THULE-H
THULE-D
RESOLUTE BAY-X
RESOLUTE BAY-Y
500γ
LEIRVOGUR-H
Missing Data
GREAT WHALE-X
COLLEGE-H
1000γ
TIXIE BAY-H
DIXON ISLAND-H
SAN JUAN-H
HONOLULU-H
KAKIOKA-H
100γ
HERMANUS-H
AU(5)
AL(5)
AE-AU-AL
1000γ
21 24 UT 06 12 18 24 06 12 18 24
APRIL 24, 1979
APRIL 25, 1979

COMMON-SCALE MAGNETOGRAMS AUGUST 28-29, 1979



SOME OTHER SOURCES OF DATA

Data Available: Some data available in publication form are cited here. A list is given, along with addresses of the responsible institutions. The WDC-A for Solar-Terrestrial Physics publishes the Toyokawa, Ottawa and Penticton radio data in its monthly publication, *Solar-Geophysical Data*. The WDC-A for Solar-Terrestrial Physics also receives most of the periodicals when they become available.

Belgium: *Bulletin d'Observations: Activite Solaire - Observations Radioelectriques Solaires - 600 MHz (Humain, Belgium)* Observatoire Royal de Belgique, Ave. Circulaire 3, Brussels, Belgium (monthly since 1962)

Canada: *Solar Noise Observations at 2800 Mc/s (Ottawa - ARO) and 2700 Mc/s (Penticton - DRAO)* Series C Monthly Report, National Research Council, Radio Astronomy Section Ottawa 7, Ontario, Canada (since 1947)

France: *Carte Synoptiques de la Chromosphere Solaire* Observatoire de Paris, 92 Meudon, France (monthly since 1931)

Germany: *Daily Mean Value of Solar Flux Density* Heinrich-Hertz Institut, 1199 Berlin-Adlershof, Rudower Chaussee 5, G.D.D. (monthly since Jul 1957)

Italy: *Solar Phenomena - Monthly Bulletin and Photographic Supplement* Osservatorio Astronomica di Roma, Monte Mario, Rome, Italy (monthly since 1958) *Osservazion Solari, Solar Flux and Distinctive Events* Osservatorio Astronomico Di Trieste (quarterly since 1965) *Solar Observations made at Catania Astrophysical Observatory* (annually since 1967)

Japan: *Monthly Report of Solar Radio Emission* Radio Astronomy Section, Research Institute of Atmospherics, Nagoya University, Toyokawa, Japan (since 1956) *Solar Activity Chart* WDC-C2, Toyokawa Observatory, Nagoya University, Toyokawa, Japan (annually since 1968) *IAU Quarterly Bulletin on Solar Activity* Tokyo Astronomical Observatory, Mitaka, Tokyo, Japan (since 1978)

Netherlands: *Geomagnetic Data* IAGA Bulletin No. 12 (1932-69), No. 32 (since 1970) IUGG Publications Office, 39 ter, Rue Gay-Lussac, Paris V, France (annually)

Taiwan: *Report on Sunspot Observations* Taiwan Provincial Weather Bureau Observatory, Taipei, Taiwan (quarterly since 1957)

USSR: СОЛНЕЧНЫЕ ДАННЫЕ *(Solar Data)* USSR Academy of Science (monthly since 1958) КОСМИЧЕСКИЕ ДАННЫЕ *(Cosmic Data)* (monthly since 1962) *Magnetic Fields of Sunspots* (bimonthly since 1964)

USA: *Preliminary Report and Forecast of Solar-Geophysical Activity* Space Environment Services Center, NOAA, Boulder, Colorado 80303 USA (weekly) *Solar-Geophysical Data* NOAA, Boulder, Colorado 80303 USA (monthly since November 1956)

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UAG-2 "A Reevaluation of Solar Flares, 1964-1966," by Helen W. Dodson and E. Ruth Hedeman, McMath-Hulbert Observatory, University of Michigan, Pontiac, MI, August 1968, 28 pp, $0.30.

UAG-3 "Observations of Jupiter's Sporadic Radio Emission in the Range 7.6-41 MHz, 6 July 1966 through 8 September 1968," by James W. Warwick and George A. Dulk, University of Colorado, Boulder, CO, October 1968, 35 pp, $0.55.

UAG-4 "Abbreviated Calendar Record 1966-1967," by J. Virginia Lincoln, Hope I. Leighton and Dorothy K. Kropp, ESSA now NOAA, Aeronomy and Space Data Center, Boulder, CO, January 1969, 170 pp, $1.25.

UAG-5 "Data on Solar Event of May 23, 1967 and its Geophysical Effects," compiled by J. Virginia Lincoln, World Data Center A, Upper Atmosphere Geophysics, ESSA now NOAA, Boulder, CO, February 1969, 120 pp, $0.65.

UAG-6 "International Geophysical Calendars 1957-1969," by A.H. Shapley and J. Virginia Lincoln, ESSA Research Laboratories, now NOAA, Boulder, CO, March 1969, 25 pp, $0.30.

UAG-7 "Observations of the Solar Electron Corona: February 1964 - January 1968," by Richard T. Hansen, High Altitude Observatory, NCAR, Boulder, CO, and Kamuela, HI, October 1969, 12 pp, $0.15.

UAG-8 "Data on Solar-Geophysical Activity October 24 - November 6, 1968," Parts 1 and 2, compiled by J. Virginia Lincoln, World Data Center A, Upper Atmosphere Geophysics, ESSA now NOAA, Boulder, CO, March 1970, 312 pp, $1.75 (includes Parts 1 and 2).

UAG-9 "Data on Cosmic Ray Event of November 18, 1968 and Associated Phenomena," compiled by J. Virginia Lincoln, World Data Center A, Upper Atmosphere Geophysics, ESSA now NOAA, Boulder, CO, April 1970, 109 pp, $0.55.

UAG-10 "Atlas of Ionograms," edited by A.H. Shapley, ESSA Research Laboratories now NOAA, Boulder, CO, May 1970, 243 pp, $1.50.

UAG-12 "Solar-Geophysical Activity Associated with the Major Geomagnetic Storm of March 8, 1970," Parts 1, 2 and 3, compiled by J. Virginia Lincoln and Dale B. Bucknam, World Data Center A, Upper Atmosphere Geophysics, ESSA now NOAA, Boulder, CO, April 1971, 466 pp, $3.00 (includes Parts 1-3).

UAG-13 "Data on the Solar Proton Event of November 2, 1969 through the Geomagnetic Storm of November 8-10, 1969," compiled by Dale B. Bucknam and J. Virginia Lincoln, World Data Center A, Upper Atmosphere Geophysics, ESSA now NOAA, Boulder, CO, May 1971, 76 pp, $0.90.

UAG-14 "An Experimental, Comprehensive Flare Index and Its Derivation for 'Major" Flares, 1955-1969," by Helen W. Dodson and E. Ruth Hedeman, McMath-Hulbert Observatory, University of Michigan, Pontiac, MI, July 1971, 25 pp, $0.30.

UAG-16 "Temporal Development of the Geophysical Distribution of Auroral Absorption for 30 Substorm Events in each of IQSY (1964-65) and IASY (1960)," by F.T. Berkey, University of Alaska, Fairbanks, AK; V.M. Driatskiy, Arctic and Antarctic Research Institute, Leningrad, USSR; K. Henriksen, Auroral Observatory, Tromson, Norway; D.H. Jelly, Communications Research Center, Ottawa, Canada; T.I. Shchuka, Arctic and Antarctic Research Institute, Leningrad, USSR; A. Theander, Kiruna Geophysical Observatory, Kiruna, Sweden; and J. Yliniemi, University of Oulu, Oulu, Finland, September 1971, 131 pp, $0.70 (microfiche only).

UAG-17 "Ionospheric Drift Velocity Measurements at Jicamarca, Peru (July 1967 - March 1970)," by Ben B. Balsley, NOAA Aeronomy Laboratory, Boulder, CO, and Ronald F. Woodman, Jicamarca Radar Observatory, Instituto Geofisico del Peru, Lima, Peru, October 1971, 45 pp, $0.55 (microfiche only).

UAG-18 "A Study of Polar Cap and Auroral Zone Magnetic Variations," by K. Kawasaki and S.-I. Asasofu, University of Alaska, Fairbanks, AK, June 1972, 21 pp, $0.20.

UAG-19 "Reevaluation of Solar Flares 1967," by Helen W. Dodson and E. Ruth Hedeman, McMath-Hulbert Observatory, University of Michigan, Pontiac, MI, and Marta Rovira de Miceli, San Miguel Observatory, Argentina, June 1972, 15 pp, $0.15.

UAG-21 "Preliminary Compilation of Data for Retrospective World Interval July 26 - August 14, 1972," by J. Virginia Lincoln and Hope I. Leighton, World Data Center A for Solar-Terrestrial Physics, NOAA, Boulder, CO, November 1972, 128 pp, $0.70.

UAG-22 "Auroral Electrojet Magnetic Activity Indices (AE) for 1970," by Joe Haskell Allen, National Geophysical and Solar-Terrestrial Data Center, Boulder, CO, November 1972, 146 pp, $0.75.

UAG-23 "U.R.S.I. Handbook of Ionogram Interpretation and Reduction," Second Edition, November 1972, edited by W.R. Piggott, Radio and Space Research Station, Slough, UK, and K. Rawer, Arbeitsgruppe fur Physikalische Weltraumforschung, Freiburg, GFR, November 1972, 324 pp, $1.75.

UAG-23A "U.R.S.I. Handbook of Ionogram Interpretation and Reduction," Second Edition, Revision of Chapters 1-4, edited by W.R. Piggott, Radio and Space Research Station, Slough, UK, and K. Rawer, Arbeitsgruppe fur Physikalische Weltraumforschung, Freiburg, GFR, November 1972, 135 pp, $2.14.

UAG-24 "Data on Solar-Geophysical Activity Associated with the Major Ground Level Cosmic Ray Events of 24 January and 1 September 1971," Parts 1 and 2, compiled by Helen E. Coffey and J. Virginia Lincoln, World Data Center A for Solar-Terrestrial Physics, NOAA, Boulder, CO, December 1972, 462 pp, $2.00 (includes Parts 1 and 2).

UAG-25 "Observations of Jupiter's Sporadic Radio Emission in the Range 7.6-41 MHz, 9 September 1968 through 9 December 1971," by James W. Warwick, George A. Dulk and David G. Swann, University of Colorado, Boulder, CO, February 1973, 35 pp, $0.35.

UAG-26 "Data Compilation for the Magnetospherically Quiet Periods February 19-23 and November 29 - December 3, 1970," compiled by Helen E. Coffey and J. Virginia Lincoln, World Data Center A for Solar-Terrestrial Physics, NOAA, Boulder, CO, May 1973, 129 pp, $0.70.

UAG-27 "High Speed Streams in the Solar Wind," by D.S. Intriligator, University of Southern California, Los Angeles, CA, June 1973, 16 pp, $0.15.

UAG-28 "Collected Data Reports on August 1972 Solar-Terrestrial Events," Parts 1, 2 and 3, edited by Helen E. Coffey, World Data Center A for Solar-Terrestrial Physics, NOAA, Boulder, CO, July 1973, 932 pp, $4.50.

UAG-29 "Auroral Electrojet Magnetic Activity Indices AE(11) for 1968," by Joe Haskell Allen, Carl C. Abston and Leslie D. Morris, National Geophysical and Solar-Terrestrial Data Center, Boulder, CO, October 1973, 148 pp, $0.75.

UAG-30 "Catalogue of Data on Solar-Terrestrial Physics," prepared by NOAA Environmental Data Service, Boulder, CO, October 1973, $1.50. Supersedes UAG-11, 15, and 20 catalogs.

UAG-31 "Auroral Electrojet Magnetic Activity Indices AE(11) for 1969," by Joe Haskell Allen, Carl C. Abston and Leslie D. Morris, National Geophysical and Solar-Terrestrial Data Center, Boulder, CO, February 1974, 142 pp, $0.75.

UAG-32 "Synoptic Radio Maps of the Sun at 3.3 mm for the Years 1967-1969," by Earle B. Mayfield, Kennon P. White III, and Fred I. Shimabukuro, Aerospace Corp., El Segundo, CA, April 1974, 26 pp, $0.35.

UAG-33 "Auroral Electrojet Magnetic Activity Indices AE(10) for 1967," by Joe Haskell Allen, Carl C. Abston and Leslie D. Morris, National Geophysical and Solar-Terrestrial Data Center, Boulder, CO, May 1974, 142 pp, $0.75.

UAG-34 "Absorption Data for the IGY/IGC and IQSY," compiled and edited by A.H. Shapley, National Geophysical and Solar-Terrestrial Data Center, Boulder, CO; W.R. Piggott, Appleton Laboratory, Slough, UK; and K. Rawer, Arbeitsgruppe fur Physikalische Weltraumforschung, Freiburg, GFR, June 1974, 381 pp, $2.00.

UAG-35 "Catalogue of Digital Geomagnetic Variation Data at World Data Center A for Solar-Terrestrial Physics," prepared by NOAA Environmental Data Service, Boulder, CO, July 1974, 20 pp, $0.20.

UAG-36 "An Atlas of Extreme Ultraviolet Flashes of Solar Flares Observed via Sudden Frequency Deviations During the ATM-SKYLAB Missions," by R.F. Donnelly and E.L. Berger, NOAA Space Environment Laboratory; Lt. J.D. Busman, NOAA Commissioned Corps; B. Henson, NASA Marshall Space Flight Center; T.B. Jones, University of Leicester, UK; G.M. Lerfald, NOAA Wave Propagation Laboratory; K. Najita, University of Hawaii; W.M. Retallack, NOAA Space Environment Laboratory and W.J. Wagner, Sacramento Peak Observatory, October 1974, 95 pp, $0.55.

UAG-37 "Auroral Electrojet Magnetic Activity Indices AE(10) for 1966," by Joe Haskell Allen, Carl C. Abston and Leslie D. Morris, National Geophysical and Solar-Terrestrial Data Center, Boulder, CO, December 1974, 142 pp, $0.75.

UAG-38 "Master Station List for Solar-Terrestrial Physics Data at WDC-A for Solar-Terrestrial Physics," by R.W. Buhmann, World Data Center A for Solar-Terrestrial Physics, Boulder, CO; Juan D. Roederer, University of Denver, Denver, CO; and M.A. Shea and D.F. Smart, Air Force Cambridge Research Laboratories, Hanscom AFB, MA, December 1974, 110 pp, $1.60.

UAG-39 "Auroral Electrojet Magnetic Activity Indices AE(11) for 1971," by Joe Haskell Allen, Carl W. Abston and Leslie D. Morris, National Geophysical and Solar-Terrestrial Data Center, Boulder, CO, February 1975, 144 pp, $2.05.

UAG-40 "H-Alpha Synoptic Charts of Solar Activity for the Period of Skylab Observations, May 1973 - March 1974," by Patrick S. McIntosh, NOAA Space Environment Laboratory, Boulder, CO, February 1975, 32 pp, $0.56.

UAG-41 "H-Alpha Synoptic Charts of Solar Activity During the First Year of Solar Cycle 20 October 1964 - August 1965," by Patrick S. McIntosh, NOAA Space Environment Laboratory, Boulder, CO and Jerome T. Nolte, American Science and Engineering, Inc., Cambridge, MA, March 1975, 25 pp, $0.48.

UAG-42 "Observations of Jupiter's Sporadic Radio Emission in the Range 7.6-80 MHz, 10 December 1971 through 21 March 1975," by James W. Warwick, George A. Dulk and Anthony C. Riddle, University of Colorado, Boulder, CO, April 1975, 49 pp, $1.15.

UAG-43 "Catalog of Observation Times of Ground-Based Skylab-Coordinated Solar Observing Programs," compiled by Helen E. Coffey, World Data Center A for Solar-Terrestrial Physics, NOAA, Boulder, CO, May 1975, 159 pp, $3.00.

UAG-44 "Synoptic Maps of Solar 9.1 cm Microwave Emission from June 1962 to August 1973," by Werner Graf and Ronald N. Bracewell, Stanford University, Stanford, CA, May 1975, 183 pp, $2.55.

UAG-45 "Auroral Electrojet Magnetic Activity Indices AE(11) for 1972," by Joe Haskell Allen, Carl C. Abston and Leslie D. Morris, National Geophysical and Solar-Terrestrial Data Center, Boulder, CO, May 1975, 144 pp, $2.10 (microfiche only).

UAG-46 "Interplanetary Magnetic Field Data 1963-1964," by Joseph H. King, National Space Science Data Center, NASA Goddard Space Flight Center, Greenbelt, MD, June 1975, 382 pp, $1.95.

UAG-47 "Auroral Electrojet Magnetic Activity Indices AE(11) for 1973," by Joe Haskell Allen, Carl C. Abston and Leslie D. Morris, National Geophysical and Solar-Terrestrial Data Center, Boulder, CO, June 1975, 144 pp, $2.10 (microfiche only).

UAG-48A "Synoptic Observations of the Solar Corona during Carrington Rotations 1580-1596 (11 October 1971 - 15 January 1973)," [Reissue of UAG-48 with quality images], by R.A. Howard, M.J. Koomen, D.J. Michels, R. Tousey, C.R. Detwiler, D.E. Roberts, R.T. Seal, and J.D. Whitney, U.S. Naval Research Laboratory, Washington, DC, and R.T. Hansen and S.F. Hansen, C.J. Garcia and E. Yasukawa, High Altitude Observatory, NCAR, Boulder,

UAG-49 "Catalog of Standard Geomagnetic Variation Data," prepared by NOAA Environmental Data Service, Boulder, CO, August 1975, 125 pp, $1.85.

UAG-50 "High-Latitude Supplement to the URSI Handbook on Ionogram Interpretation and Rediction," edited by W.R. Piggott, British Antarctic Survey, c/o Appleton Laboratory, Slough, UK, October 1975, 294 pp, $4.00.

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UAG-52 "Experimental Comprehensive Solar Flare Indices for Certain Flares, 1970-1974," by Helen W. Dodson and E. Ruth Hedeman, McMath-Hulbert Observatory, University of Michigan Pontiac, MI, November 1975, 27 pp, $0.60.

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